Performing Social Work

Competence, orderings, spaces and objects

Dissertation submitted for Ph.D.

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June 2001

Contents

Acknowledgements

Many people have contributed to this dissertation in one way or another. First of all, I wish to thank a number friends in and around Social Psychology at the University of Copenhagen: David Metz, Jesper Döpping, Arne Prahl, Sven Mørch, Helle Andersen, Anne de Haas, Lotte Kragh, Lotte Huniche, Estrid Sørensen, Morten Nissen, Ole Dreier, Tine Jensen, Ole Estrup Rasmussen, Jesper Toft, Birgit Rasmussen, Charlotte Andersen, Line Andersen, Birgitte Diekmann, Henrik Eriksen, Klaus Christensen, Thomas Macrill.

Second, I want to thank a loosely coupled yet consistent network of STS-people in Copenhagen: Mark Elam, Stine Adrian, Bent Meier Sørensen, Birgitte Gorm Hansen, Hanne Albrectsen, Kristian Hvidtfeldt Nielsen, Yutaka Yoshinaka, Henriette Langstrup, Signe Svenningsen, Kjell Tryggestad, Dixie Henriksen, Jens Kaaber Pors.

The empirical part of this project was helped tremendously by the positive reception of my project in the Family and Labour Market Administration in the Municipality of Copenhagen. My thanks go to Henrik Dencker and Lone Sørensen from the Organisational Development Office. I am also deeply grateful to the team manager and 46 social workers, who allowed me to observe their work during a seven month period.

As a part of this project, I visited Centre for Science Studies and the University of Lancaster for three months. This visit to one of the world centres of STS turned out to be extremely productive and inspirational. I thank John Law, Heather Chappells, Tiago Moriera, Vicky Singleton and Simon Kelly. A couple of good friends from completely different academic fields also helped to make my Lancaster-experience fun: Thank you, Chieko Kawauchi and Firas Barakat.

My father Jens Elgaard Jensen and my brother Karsten Elgaard Jensen also deserve great thanks for much encouragement during this project.

Last but most of all I wish to thank my fiancée Astrid Pernille Jespersen, who has supported, encouraged and borne with me all along.

Chapter One

Introduction

"The municipality must meet the user with respect, dignity, dialogue, and trust"
Mission statement from the municipality of Copenhagen

One day during the fieldwork, that I report in this dissertation, my eye was caught by two peculiar pieces of office furniture. I was in the reception area in a so-called local centre, which is one of eleven regional administrative units in the social work administration of Copenhagen. The reception area is where you report if you are a client in the social system. You enter the local centre through an automatic glass door, you pass a small waiting room, you turn left and enter the next room. If you arrive at a time when things are reasonably quite, you will find two social workers sitting behind large desks. Behind them there is a huge file cabinet with case files. On the tables, there are scattered papers, more case files, and a couple of computers. On walls, there are a few posters, one of which warns you about the effects of smoking hashish. The office is nicely decorated with green plants, and it looks rather neat and cosy. What caught my eye that day were the two reception counters that were standing between the social workers and the entrance. They were around the height of a bar counter and a bit wider than an average person. They stood about two meters apart. These counters are where the clients and the social workers physically meet. I remember thinking, that these counters somehow send a friendly message. In other administrative offices and in police stations, I have seen counters that split the room in two and form a barricade between the clients and the administrators. However, these counters, that you can walk around, seem to convey the message that the social workers have no wish to hide. A little later I happened to look at the bottom of the counters. To my surprise, I saw that they were attached to the floor by strong bolts. This immediately evoked a different interpretation. Perhaps the counters were secured in order to stop them from sliding on the floor. But isn't it likely as well that the bolts are there to prevent drunk clients from knocking over the counters, and to prevent angry client from lifting and throwing the counter? So the counters seemed to carry an additional message. A message about what might go wrong in the meeting with the clients. The friendly counters were also suspicious counters.

The bolted counters indicate some of the main themes in this thesis. First of all it indicates that when a municipality "meets its clients" it is not simply a meeting between two psychological entities. The clients are met by a constellation of social workers, green plants, educational posters, and counters. Along this line I will later argue that what the local centre does, its *competence*, is not an exclusively human affair either.

The second theme, that is suggested here, is the co-presence of different logics. The counters are *simultaneously* friendly and suspicious; it is a 'both-and' rather than an 'either-or'. Similarly, I will argue, that the local centre is swarming with different logics. Sometimes these logics struggle bitterly, but at other times there are practical arrangements, such as bolts in the floor, that allow the differences to co-exist.

The image of differences, that are somehow made to co-exist, may apply to objects other than the two counters in the local centre. The present text is one such object. The text is a converging point of several series of events, it contains different logics, and it 'does' different things. In the following, I will tell four different origin stories of the present text. These stories indicate some of the logics, which I have fitted or perhaps bolted together.

First, I describe the project as an outcome of a particular institutional affiliation; I applied for a Ph.D. scholarship, which was imbedded in a larger project with a particular research agenda. In this context, I carefully defined the aims of my project and my definition of competence.

Second, I will depict the project as the outcome of a very productive contact to the municipality of Copenhagen; I was introduced to a large organisation development project, which reorganised more than 1200 social workers into cross-professional teams. And I was granted access to one particular team, which I followed for seven months.

The third origin story is about philosophical positions. It portrays my project as an outcome of a particular philosophical take on the empirical material from the team project. My approach, which calls itself constructionist, distinguishes itself from modernist and post-modernists positions.

The fourth origin story, depicts this thesis as a consequence of a particular theoretical choice. I present a spectrum of strategies for studying competence, and I position myself within a so-called complexification strategy. With this strategy, competence is studied as a relational effect rather than as an underlying essential quality.

Finally, I will present an broad outline of the chapters and the argument of this thesis.

First Origin Story - Institutional Affiliation and Project Plan

The present dissertation is a part of a now finished five-year research project, located in the Department of Psychology at the University of Copenhagen. The broad project aimed to investigate the development of competence from three different angles. One group of researchers studied competence through a cognitive approach. A second group has focused on computer supported co-operative work. Finally, there was a social psychological group of which the present project is a part. This third group studied competence as development and learning in workgroups.

In the original description of the broad project a common definition of competence was formulated by my colleague Ole Elstrup Rasmussen: ”Competence is the ability to handle knowledge and insight in such a way, that sense is made in a situation which is characterised by rapid changes and low predictability”

However, the spirit of the project was never one of uniformity, so in my project plan (Elgaard Jensen, 1997), I took the liberty of giving this initial ’definition’ a more social psychological flavour[1]. First, I exchanged the notion of ’sense making’ with the broader notion of ordering. To me the former tends to limit the perspective to human cognition whereas the latter opens the perspective to broader transformational processes. Second, I stressed that ordering is a process that involves negotiations and co-ordinated actions among a number of people. These numbers might include a more or less well-defined working group (cf. Kirkman & Rosen) but the processes of ordering might also be related to a the broader network of working relations. Thirdly, I referred to actor-network theory (e.g. Callon, 1986b) to argue the point that ordering is an impure, heterogeneous process, which include numerous ‘entities’ such as tools, machines, texts, words, materials, humans etc. If this ontological claim is accepted, then it follows, that a host of non-human entities should somehow be allowed to enter the analysis on an equal footing.

So to sum up my translations of the initial ‘definition’, I proposed to study competence as processes of ordering in heterogeneous networks.

In terms of methods, I was also strongly influenced by actor-network theory. This ’school’ is almost exclusively developed from ethnographies of the sites in which science and/or technology is developed. I decided that I too wanted to study a site where things were in the making, not scientific facts or novel technologies but new competencies. Furthermore, I felt that a case study

[1] The two other participants in the social psychological group, Arne Prahl and Jesper Döpping made somewhat similar translations.

primarily based on observation would be a *sine qua non* to get a sense of the materialities involved in the development of competence.

Second Origin Story - Access and Data Collection

With the formal acceptance of my project plan, I embarked on my three year Ph.D. period; I began to do some in-depth reading, I took a number of Ph.D.-courses, and to prepare myself for the fieldwork I wrote an article on method (Elgaard Jensen, 1999b). I also made a number of contacts to companies and organisations where I hoped to study the development of competence in and around some working group. For various reasons all of these contacts were futile, and as the months passed my eagerness and anxiousness to get into the fieldwork grew. Eight months and still no data!

At that time my co-supervisor, Jesper Döpping, directed my attention to a large team project that was going on in the municipality in Copenhagen. He offered to make the first phone call, and he did so very successfully. The person in the central administration he contacted, Lone Sørensen, was very interested in 'external perspectives' on their project, and she mailed me two reports about the project. The first report detailed the preparatory discussions before the launching of the project. The second report stated the official plan and goals for the team project.

From this material and the Internet homepage of the Municipality of Copenhagen I gathered a first understanding of what the team project was. First of all, I found out that the project was taking place in a particular organisational unit called the Family and Labour Marked Administration (FLMA).

The FLMA is one of seven administrations in the municipality of Copenhagen. Its area of jurisdiction is a very broad spectrum of social work, social services and administration in relation to the labour market. The FLMA consists of (a) twelve central offices referred to as 'the central administration', (b) eleven local administrative units called the 'the local centres', and (c) a large number of institutions such as day care institutions, residential homes for elderly people, supported housing, drug addiction clinics and shelters.

The team project was directed at the middle layer: the eleven local centres. The key manoeuvre of the team project was to divide the local centres, with a total of 1200 employees, into a number of cross-professional teams. After this organisational change each local centre would consist of 4 teams: An *adult team* dealing with the so-called hard cases, a *family team* dealing with all cases involving children, a *service team* dealing with lighter cases, and finally

a *technical administrative* team figuring in a role as controller and technical back-up.

From this initial reading about the team project, I inferred that each of the teams would be the site of substantial development of new competencies. The team members would be facing a fair amount of change in their working conditions due to new tasks, new colleagues, new divisions of labour, and new relations to external partners such as the other newly formed teams. And thus I felt convinced that the team project would be a very interesting place to follow the heterogeneous processes of old and new orderings.

In the following days I wrote a letter to my contact in the FLMA stating a proposal for my engagement with the team project (appendix 1). The key point of this proposal was that I would do participant observation in order to identity conditions that would enable or restrain the development of new competencies in a team. A few weeks later, I was invited to a meeting with the board of the FLMA.

At the board meeting, I did my best to present my project proposal. I remember one of the board members asking me, if I would be able to evaluate the effect of the team project. I answered that I imagined the work in the local centres to be effected by numerous 'agendas', and therefore I did not believe that it was possible to clearly single out the effect of the team project.

Another issue that was discussed was the *scope* of my investigation. I pronounced my preference for an extended period of observation with one team. Some of the board member would have liked to see an investigation of the interaction between all four teams in one centre. But they also understood my wish to grapple with competence in more detail, and they therefore allowed me to limit the study to one team.

We talked at some length about how my observations might proceed. We agreed that ideally I should follow a team during its initial formation and then onwards for half a year. The majority of the teams were already started, but there were still a few teams that had not begun 'the team process'. If possible, I should follow one these teams. We also agreed that it would be most interesting for me to follow an *adult team*, because this type of team is comprised of professional groups that have never co-operated before. The director of the board promised to contact some of the team managers and find a team that would volunteer to host me.

The board requested that a *reference group*[2] should be set up, and they already had a clear idea about who the members should be: Two board

[2] The reference group later worked out a formal collaboration agreement in relation to my project.

members, a central administrator (my initial contact person), the manager of the team to be selected, one representative of the employees in the team, and my two supervisors.

Finally, the board invited me to sit in on a series of meetings, each of which introduced a newly formed team to the team project. The first of these meetings was on the very next day. It goes without saying that I was somewhat overwhelmed, but extremely pleased with this sudden change of my empirical luck. I now had contact to the board of a huge organisation. I was 'legitimised' and granted access. And I was to study a newly formed team for an extended period of time.

In the next couple of weeks I followed the introductory meetings of six different teams. During this period, an adult team agreed to have me following their process. In addition to the team manager, this team consisted of 46 social workers, which were at that time divided into four different professional groups. From then on, I went to a large number of the meetings of this team. First, I observed the team during a one-day meeting with a consulting firm, a so-called team training session. Later, I sat in a number of team meetings in the local centre. I also followed smaller meetings within the different professional groups in the centre. I followed several individual social workers on entire workdays. I spent several days in the reception area observing the work. I observed a number of meetings between social workers and clients. I was allowed to read case files, and I did a few formal interviews to get additional information. Last but not least, I should mention the most valuable source of information, namely the numerous short conversations I had with individual social workers and their manager during breaks. In these short interchanges people gave me valuable explanations about what was going on, and sometimes they expanded on their 'public' opinions and actions. On these occasions I often just listened and asked questions for clarification. But sometimes I also used the tactic of confronting the person with views that I had heard from others; "But if the team manager heard you say this, wouldn't she argue that...?" or "But I don't think the caseworkers would agree with that, I have heard them claim that..." I probably shouldn't overestimate the efficiency of this strategy, but I do think that it sometimes made me a more interesting conversation partner (bearing in mind my limited knowledge about the daily business of the local centre), and hopefully it also conveyed the message that I was trying to avoid taking over the view of one particular party or group in the local centre.

See appendix 2.

Quite a number of times, I was asked to explain what I was doing and what my project was about. The short hand explanation, which I always used, was this: "I am interested in how competence develops in relation to the team project. But since I do not know very much about the work in this local centre, I am also very interested in understanding what your daily work is all about" The social workers and the team manager replied to this in very accommodating and friendly ways. They found time in their busy working days to tell me about their work, they informed me about interesting meetings, and they allowed me to be 'a fly on the wall'.

During all of my observations I took notes[3]. Lots of notes. Every time a speaker said something on a meeting, I jotted down as many of his or her words as possible. The following afternoon or evening I typed up my notes, and to some extent I also reconstructed the statements and events through memory. Along the way, I found a few ways to further this process. I learned the names of most of the 46 social workers, which of course allowed me to note who said what. I also developed a number of abbreviations for terms often used in the local centre. And finally on the very practical level, I started to use an A5 rather than A4 notepad. This made hours of note taking less strenuous because it allowed me to place the pad on my lap some of the time and thus change position.

In the entire seven-month period of fieldwork, I made about 50 visits to the local centre. From this I produced about 200 pages / 80.000 words of typed field notes. In addition, I compiled an equal amount written material from other sources: meeting papers, working papers, official reports on the team project, articles from the house organ, projects and analyses on the FLMA.

Stories about the Team Project

To this point I have told one origin story about my institutional affiliation and another one about the empirical opportunities that were opened to me in the municipality of Copenhagen. The latter story contains a description of structural change in relation to the team project. But there were much more than organisational structures at stake in the team project. It had a bearing on numerous other issues about daily work load, office space, case files,

[3] I decided not to make tape recordings because of two problems. (1) In many work situations social workers and clients were coming and going. This would make it impossible or at least very awkward to ask late arrivers for permission to tape. (2) Several of the meetings, which I observed, had a large number of participants, which would make it very difficult to identify the speakers and to get audible recordings of everybody.

professional demarcations, managerial politics, clients, services, regulations, resources, co-operation and so on. In order to give the reader some sense of these matters, I will continue this introduction with three stories about the project told by the participants. I have two purposes in recounting these stories; I want to give a further introduction of the empirical case, and I want to indicate some of the special problems, which are related to the study of a large, on-going, and hotly debated project. Subsequently, I will relate these problems to philosophical positions.

The first story is one that was frequently told by managers and central administrators. It went like this:

> The social work administration consists of a lot of different professional groups, separated into different departments and offices, each administering different parts of the social legislation. The users are made to run the gauntlet between the offices, and the professionals do not co-ordinate sufficiently amongst themselves. It is the professionals' perspective rather than the users' perspective that dominate the administration. Each of the professional groups focuses on those specific services, which they can offer instead of focussing on the actual needs of the user in front of them. All this will be changed with the team project.

Sometimes I heard a completely different story about the team project. This was the kind of story a professional (e.g. a caseworker) would tell me during a smoking break with an air of confidentiality:

> The resources of the social work administration have been cut back year after year. And there has been a steady outpour of legislative changes, which we (the professionals) have to adjust to. On top of this, management comes up with some new and 'brilliant' project every few years. So far every single project has failed to produce the promised results, and every single project has taken up great amounts of time, which could have been better used serving the clients.

And then there is a third story about the team project. This one is gathered from articles in the periodical published by the FLMA for its employees:

> In 1997 a study of the psychological work environment was conducted by an external consulting firm. The primary stressor identified in this study, was the type of work in which one caseworker has the sole responsibility for a case. The recommendation was thus to organise the work in teams. Following this, the local centres made a number of efforts to share the responsibility of cases between groups of caseworkers.

> In 1999, the team project expanded the idea of teamwork to all areas of work in the local centres. In this project, the teams are comprised of different professional groups, which have previously only co-operated on an ad hoc basis. Furthermore, the team project empowers the team members by removing a layer of middle managers.

The three stories, which I have reproduced here, indicate some of the intriguing as well as frustrating questions confronting anyone who wishes to study a project. First of all, there is a multitude of actors offering comments on the project. Should I listen to managers, social workers, or the reports from consulting firms? And how should I handle differences between these sources? Second, the stories operate with different time frames. The first story talks of before and after the solution of an age-old problem. The second story portrays the team project as the repetition of the same folly. The third story locates the team project in a progressive series of improvements. Which time frame should I use? Third, the stories evoke different levels. Should a project be studied on the level of the entire project (whatever that may be), or is the 'real' project to be found in the nitty-gritty details of work in a local centre?

Obviously these questions are both hard and uncomfortable. Any choice seems inadequate, and the whole business seems messy. How should one relate to this as a researcher? In the following I would like to identify three philosophical positions in this issue. But since this is not a philosophical treatise, I will use the list of positions to introduce rather than thoroughly argue my own position. My hope is that the reader will judge the viability of my position on the basis of the entire analysis that follows from it, rather than on sketchy comments in this introduction.

Third Origin Story - Philosophical Positions

The first philosophical position, which I would like to identify and to distance myself from, might be called *modernism* or *philosophical realism*. Some of my colleagues at the Department of Psychology, who promote one version of this position, like to tell the tale of the blind men and the elephant. In the poem by John Godfrey Saxe the tale goes like this:

> It was six men of Indostan
> To learning much inclined,
> Who went to see the Elephant
> (Though all of them were blind),
> That each by observation
> Might satisfy his mind.

The First approached the Elephant,
And happening to fall
Against his broad and sturdy side,
At once began to bawl:
"God bless me! but the Elephant
Is very like a wall!"

And the story continues with each blind man grasping a different part of the elephant and pronouncing a different the version of what the elephant is. He who grasps the trunk takes the elephant to be a snake. He, who grasps the tail, takes the elephant to be a rope and so on. The conclusion by Saxe is that "...each was partly in the right. And all were in the wrong!" The philosophical realists, however, add a little to this conclusion by saying that the role of the researcher is to be the one who rises above the quarrels, and sees the elephant. Research is about identifying the objective reality behind all the partial and differing versions. Perhaps this sounds innocent. But if we carry this position to the team project, then we would depict all the actors of the social administration as blind men hanging on to a whole that they cannot grasp without the help of the researcher. Besides from the uneasiness that comes with this rather self-celebratory metaphor, I find the elephant story misleading because it obscures the role of the researcher. It depicts him as not seeing the world from any particular perspective (he sees it all from tail to trunk). Furthermore it depicts the researcher as disentangled from reality; as opposed to the blind men, he doesn't touch anything, he simply contemplates from a distance[4]. This amounts to what Donna Haraway (1991) has called the God-trick of seeing everything from nowhere. There are of course other and more modest versions of realism. Karl Popper would stress the temporary and contestable nature of truth. But the belief that useful knowledge comes in the form of a singular account, which is universal rather than situated in nature, remains the hallmark of the realist project. And this mode of knowledge production, I suggest, sits uneasily with a politically volatile team project, which comprises a multitude of divergent stories and actors.

A second position on the disunity of the stories would be a *post-modern* position. The point of this is to make a virtue of the necessity that stories and perspectives differ. And the aim is to promote and celebrate the differences, rather than to reduce them to a single coherent master narrative. This of

[4] I thank David Metz for suggesting a critical reading of the elephant-story.

course entails a harsh critique of the modernists' pretensions to end the conversation by claiming to tell the whole story. For post-modernists/social constructionists such as Gergen (1995) it is precisely *conversation*, which is the key metaphor for social life. His aim of research is to construct situations that allow more voices to enter into the on-going dialogue. In this tradition, a researcher would investigate a team project by somehow staging a conversation between as many different voices as possible. I might note that in a social constructionist frame, the idea of 'a' team project, doesn't really work. There are multiple voices, multiple realities, and thus multiple projects, which may or may not come together. I find myself largely sympathetic to the critiques of modernism, which are raised by post-modernists such as Gergen. I like his open-endedness, and his commitment to a processual view of world. But I also find his conversation metaphor profoundly problematic. Within Gergen's theoretical framework it is virtually impossible to explain why certain types of voices, such as male, scientific, managerial, militant, racist voices so often succeed to dominate[5]. Furthermore, if ontologies were simply produced in conversation then the obduracy of institutions could not be accounted for as anything but conversational effects. I find this explanation far too limited, and in dire need of additional explanatory resources.

A third position, the one that I will adopt in this dissertation, calls itself *constructionist*. One way to introduce this position is to say that voices or statements get loaded. Latour (1991) tells the story of a hotel manager who faces the problem that his guests forget to leave their keys at the reception desk before they leave the hotel. First, he tries to remind them: "Please, bring back your keys". The effect is negligible. He then puts up a sign: "Please leave your room key at the front desk before you go out". This has some effect, but the majority of the guests still leave the hotel with their keys in their pockets. Finally, the hotel manager talks to an 'innovator', who suggests that he attach a metal block to each key. This works. Now the overwhelming majority of the guests happily rid themselves of the keys at the reception before they leave the hotel. Latour depicts this little story as a battle between two 'programs': leaving vs. not leaving the keys. The first program gains more and more strength by loading itself with more and more elements. A verbal statement, a written sign, metal blocks. Consequently, the first program becomes more and more convincing in a quite literal sense. The question about how one voice becomes dominating - a mystery to the *social* constructionist - is now no longer a mystery. The manager's voice comes to

[5] Or to take an example from the team project: why and how does an optimistic discourse about organisational restructuring at some point manage to repress a 'worried' discourse about scarce resources?

dominate by enrolling a number of other elements into his network. Only, constructionists would never reduce the event of the returned keys to the effect of 'a voice'. Instead they would attribute the effect to the entire heterogeneous network, and they would note how the manager's initial statement is subtly changed during the process of network expansion (Law, 1999a).

So with a constructionist approach the number of entities, which are included in the analysis, is expanded from merely 'social' actors to entities of any kind: texts, machines, materials, humans, words and the rest. This of course raises different questions for someone who wants to study a team project. The important questions are now: What gets connected and what gets disconnected? Which programs are successful in enrolling allies (of whatever kind)? And which programs are able to maintain their connections (of whatever kind) over time? Finally, I might note that the constructionist view of different and struggling programs would depict the team project as something *partially coherent*. The team project is more heterogeneous than the singular reality presumed by philosophical realists, but is also less scattered than the multiple voices presumed by post-modernists (Law 2001, Mol 2001).

Constructionists of various traditions have developed a multitude of concepts and metaphors to deal with the questions above. I will go into more detail with a number of these in chapters 3 and 4. In this introduction, however, I will move on to the fourth and final origin story. This last story describes my project as an outcome of a particular theoretical and strategic choice in the study of competence.

Fourth Origin Story - Strategies in the Study of Competence

In 1995 the Confederation of Danish Industries (DI) carried out a project on securing and measuring the effects of in-service training (Dansk Industri, 1995). The question was this: How can a company be certain that it obtains the effect that it pays for, when it sends an employee on a course. More specifically, the question was this: How can companies measure the *competence* that an employee has gained? The answer to this question was promoted at a meeting for a couple of hundred Danish training and personnel professionals (including myself). The project managers outlined a solution procedure based on two procedures. First, the course provider should delineate some clear behavioural goals in the form of tasks that an employee should be able carry out after taking a particular course. Second, the company should systematically evaluate whether the employee were able to manage the expected tasks. The purpose of these procedures were to create a transparent

market. Through continuous goal setting and evaluation, the companies would gain updated knowledge of which courses worked and which didn't. And consequently, the training budgets would be spent in a much more efficient manner.

The response from the audience was strikingly negative. A number 'facts' were pointed out, that ostensibly render effect measurement impossible. Not all employees are equally motivated. Not all instructors in charge of a particular course are equally good. Not all employees have the necessary prerequisites for a given course. Not all classes taking a particular course have an equally good group dynamic. Not all employees have equally good opportunities to practice what they have learned. Eventually, some of the course providers in the audience stated that it would be unfair if their course was ditched on such a loose basis. They argued that the DI had built its method on the assumption of 'other things being equal'. But other things are never equal. Finally, one person argued that, at the end of the day, the decision of how to respond to an effect measurement is a political one.

I suggest that the anecdote above represents two opposing strategies for dealing with competence. The first is about *purification*. The competence of the individual employee should be separated from other phenomena by defining it more clearly and by evaluating it more systematically. Competence is taken to be some essence, which can be disentangled from the rest, cleaned up, boiled down, measured, and optimised.

The second strategy is about *complexification*. The proponents of this strategy deal with competence by relating it to all sorts of other phenomena: individual motivation, instructor quality, group dynamic, opportunities for practice, politics. The assumption seems to be that competence only makes sense when it is placed in context, relation, or connection with something else.

The broad academic literature on competence can be viewed in terms of the purification-complexification spectrum as well. Some authors are clearly working to isolate competence, whereas others are in the business of relating and contextualising it. In the following, I briefly present examples of theories on competence at different locations on the spectrum. I will begin with the purifying positions that differ the most from my own, and I will end with the complexifying theoretical positions, which are the ones I am in the best position to communicate with.

Purifying competence - finding the underlying factors

Jörgen Sandberg, a Swedish phenomenologist and researcher in management and organisation, opens an article in the following way: "Organisational actions such as producing cars, treating illnesses, transporting and educating

are always based on a certain kind of human competence". Sandberg goes on to define competence as constituted by the meaning the work takes on for the worker in his or her experience of it (Sandberg, 2000, p.11). Furthermore, Sandberg explains that each individual forms one particular conception, which guides his approach to the work. Finally, Sandberg reports a study in which he identifies three (no more no less) distinctly different conceptions directing the work of engine optimisers on a Volvo factory. The purification strategy is clearly evident in this line of work. Sandberg moves from a very broad perspective ('car production') to a very small number of distinct and underlying conceptions carried by individuals.

Ole Elstrup Rasmussen, a Danish psychologist, represents a second, but rather different example of the purification strategy. Rasmussen (1995) takes the disputed distinction between leadership and administration as his starting point. Behind this, he suggests, lie two fundamentally different human activities. On the one hand there is *qualified* performance, which is about "systematising a complicated occurrence, in such a way that a specific state of objective is achieved" (ibid, p.60). On the other hand there is *competent* performance which is about handling a "complex occurrence in such a way that a sense making state is brought about" (ibid, p.61). Qualifications are thus related to rule following and problem solving in relatively familiar situations, whereas competencies are related to leadership and sense-making in relatively novel situations. Elstrup Rasmussen has used the notion of competence as the basis of heuristic method of textual analysis, which attempts to reveal the specific organisation of the writer's sense-making capacities. The overall direction of this research is once again a strategy of purification. Competence is regarded as a fundamental underlying process; it explains very broad phenomena (such as leadership) and it can be studied by isolating, purifying and revealing basic structures.

Middle positions - matching persons and jobs

Continuing the game of arraying theories of competence on a scale from purification to complexification, I will now move to the middle of the spectrum. At this position, I will locate a number of authors, who pragmatically deal with the question of how to make a good fit between the demands of jobs and qualifications of the work force. These authors have no particular interest in finding a few essential individual qualities, and neither do they put strong restrictions on the number of dimensions by which they describe the jobs. What is maintained, however, are some rather fixed notions of the person versus the job. For that reason, I position them only halfway toward the complexification strategy.

In the Danish context, a well-known example of this approach is the work of the EVU-group in Roskilde University (Andersen et al., 1993) [6]. The basic premise of their work is the assumption that qualification demands (jobs) and the process of developing qualifications (e.g. individual education) are two entirely different 'structures'. These structures have different bases and different dynamics, but on the labour market, they enter into interplay. Numerous projects in Industrial Sociology have developed concepts to describe the 'objective' job demands. Productive vs. intensive qualifications, innovative vs. negative qualifications, process-dependent vs. process-independent qualifications (Andersen et al, p.72-74). But according to the EVU-group, the subjective side of the equation has been overlooked or too simplistically derived from the job analyses. Therefore, they propose a broad model of individual qualifications spanning personal, professional as well as societal qualifications. Furthermore, each type of qualification is divided into three levels of depth ranging from a basic level of qualifications, which is thoroughly integrated into the identity of the individual, to a very superficial level of qualifications, which is related to a specific context.

The work of the EVU-group and others in this tradition have been instrumental in raising pertinent questions about the development of the labour market, the goals of the school system, risks of de-skilling, and hopes for creating better jobs. However, criticisms have also been raised. Ellström (1992) has pointed out that the tradition builds on the assumption that the development of qualifications can be analysed and managed in a technical-rational manner. This implies the voluntaristic view, that management is based on relevant information, rational calculation, and control of the implementation process. All of these assumptions have been refuted by organisational theorists[7]. Strong ideological critiques have also been voiced. Thus, Mathiesen (1998) has accused the EVU-group of lending support to a neo-liberalist discourse of isolating and blaming the individual.

Much more could be said about this line of work, but what interests me here are the different strategies for dealing with competence on the spectrum from purification to complexification. The middle-range strategy of the EVU-group attempts a pragmatic description of the interplay between 'two structures', individuals and jobs. Many authors, in particular those employing a complexification strategy, would find this too limited. To these I will turn next.

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[6] For a thorough review of similar HRM-literatures on competence see Bramming (2001, chap. 3).
[7] E.g. March & Simon (1958) and March & Olson (1995)

Complexifying competence - the description of relational effects

At the complexification end of the spectrum, competence is constantly related to something else. Words like contextual, situated, mutually constitutive, dialectical, interdependent, and relational appear with high frequencies. I will take a look at two distinct examples[8].

Jean Lave & Etienne Wenger (1991) develop a conception of learning that departs radically from the dominating individualistic and cognitive notions in education research. Instead of describing learning as a process in the heads of individuals, they locate learning in processes of participation. Two key concepts are developed to analyse these processes. First, Lave & Wenger choose to analyse social practice in relation to the so-called *communities of practice*; groups of practitioners, activities, tools, etc, involved in some common production for an extended period of time. Examples of this could be the midwifes on the Mexican Yucatan peninsular, the tailors in a group of Nigerian tailor shops, or a local section of Alcoholics Anonymous (ibid, chap. 3). Second, Lave & Wenger invent the term *legitimate peripheral participation*. This term indicates the process by which a newcomer to a community of practice gradually moves toward a fuller participation in the community. *Legitimacy* is achieved when the person is formally accepted into the community. This might take the form of an apprenticeship contract, but there are many other possibilities. *Peripherality* is a positive term, which indicates that the newcomer is given tasks that are relatively easy, and where errors are relatively benign. Later he moves through a succession of more and more difficult tasks. But despite the easiness of the initial tasks, the newcomer is a real *participant*; the tasks are not 'artificial school assignments' but useful and necessary contributions to the production processes of the community. The concept of learning as legitimate peripheral participation works as a conceptual bridge that allows Lave & Wenger to forge an intimate link between the learning of the individual and the reproduction of the community of practice. With this conceptual framework, the idea of competence is thoroughly situated in the social practice of a community. In the words of Jean Lave: "cognition [and she might as well have said competence, TEJ] observed in everyday practice is distributed - stretched over, not divided among - mind, body, activity and culturally organized settings (which include other actors)" (Lave, p.1). The analytic strategy of Lave & Wenger is thus to make sense of competence by attending to its embeddedness in communities of practice. This is a strategy of complexification.

A second example of the complexification strategy is the notion of *material agency* in Actor-Network Theory (ANT). The basic assumption is that events

[8] For a broad review of some of these literatures see Star (1992).

or transformations of the world should not be attributed to human effort alone, but rather to the effects of a network of human and non-human entities (or actants). Agency and competence are thus taken to be distributed, relational phenomena, rather than something, which can be located or isolated in human bodies. I have already mentioned one example of actor-network-theory namely Latour's story about the keys and the hotel manager. This story provides a theoretical vocabulary for studying competence, or power, or transformative effects by paying close attention to the processes by which heterogeneous elements are associated into networks. A number of other authors in or close to the ANT tradition have studied processes of heterogeneous networks; i.e. how networks are constructed (e.g. Latour 1987), demolished (e.g. Callon 1986a), continually reformed (e.g. Singleton & Michael), fine-tuned (e.g. Pickering), extended (e.g. Akrich), or uneasily patched together (e.g. Law 2001). I will discuss this theoretical field at length in chapters 3 and 4. In this introduction, I will simply note that these studies take the notion of agency and competence far beyond the 'isolated human', and they therefore represent a second example of the complexification strategy[9].

In this thesis I have chosen to pursue the strategy of complexification, and my main focus will be on authors inspired by the ANT-tradition. Having said this, I might now embark on some traditional academic exercise of denouncing people, who have made the opposite theoretical choice by pursuing the purification strategy. I might call them reductionists, and I might claim that they only cover a limited part of a bigger picture. And then of course they would make counter-arguments, accusing me of misconstruing what competence really is, and they would say that I am missing the underlying structure of competence.

I don't find such games particularly productive. First of all, I don't believe that we are able to give complete accounts of our reasons to follow a particular strategy. We are all caught up in structures, discourses, networks, trends, or what ever we want to call them, that are much more encompassing than our awkward verbal accounts. Second, there is no particular reason to

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[9] Distinctions between theories of competence could of course be made in multiple other ways. Recently, Metz & Westenholz (2000) have formulated a distinction between relational and foundationalist paradigms. *Foundational* theories make a priori assumptions about the nature or the essence of the entities, which are related, whereas the *relational* theories take the entities to be mutually constitutive. Among other things, this framework can be used to identify differences in the group of theories, which I have called 'complexifying'. The two examples, which I have presented (Lave and ANT), are both relational as well as complexifying. There are however theories, which complexify in a *foundational* way. Chaos theories would be an example of this. They describe a vast number of relations (complexification), which are all made out of simple, 'given' elements (foundationalism).

believe, that a few well-chosen words in an introductory chapter would convince others to leave their positions; sociology of science since Kuhn (1962) has argued this point very convincingly. For these reasons, I am perfectly happy to recognise that there are incommensurable paradigms all around. Sometimes, we might find a battleground or a trading zone. But at other times we might just do ourselves the favour of *not* pretending that our terms have to power to explain others away.

Outline of the Thesis

I have now described four different origin stories of my project, and thus four different sources of the logics in my text. At this point, I will make a first and awkward attempt to bolt it all together in a single question: How is it possible to investigate the development of competence - i.e. heterogeneous orderings - in the team project through a complexification strategy and with a commitment to constructionism?

The outline of my answer - this thesis - is as follows:

In chapter two, I try to clarify what it is to write an account of participant observation. More specifically, I discuss how facts are constructed in social science. The purpose of this discussion is self-reflective; I try to say something about the production of the facts that I will later present. But I have chosen to do parts of this reflection by proxy: I enter upon the reflection through an analysis of a classic text by Bruno Latour and Steve Woolgar. This analysis leads me to picture explanations in social science as *networks*; Accounts are relational webs organised in such a way that certain knots (concepts) can speak on behalf of certain other knots (lesser concepts and 'data'). Following this, I describe my own successive analytical attempts, which finally produced the network that I present as an account of the development of competence in the team project.

In chapter three, I discuss a number of learning theories, which are presently the predominant way of conceptualising competence in psychology and social psychology. These theories all build on some notion of a *learning system*, which adapts to its surroundings. I argue through a series of examples, these putative systems tend to overflow. Processes of ordering constantly cross the system boundaries, which the learning theories define. The notion of learning is therefore problematic in a study of heterogeneous processes of ordering. So although recent social learning theories pursue a complexification strategy in the study of competence, I find it necessary to abandon the notion of learning, because the very idea of learning presumes an unwarranted degree of closure. As an alternative, I explore the metaphor of the network in the actor-network

theory of the 1980's. This metaphor, I argue, is much better equipped to study evolving processes in which ordering comprises multiple entities, some of which are material objects like counters. However, actor-network theory has also been criticised for being overly concerned with a centred, managerial view of ordering. This criticism is taken into account by some recent science and technology studies, which are sometimes referred to as "the performative turn".

In chapter four, I explore the concept of performance, which can be defined as "unbounded, materially heterogeneous, recursive processes or patterns that can be imputed to the social". I review a number works that deal with performance in three different but supplementary ways. One conceptualisation of performance describes the patterns of the social as a number of interdependent mini-discourses or *modes of ordering*. A second conceptualisation describes the patterns of the social as the performance of different types of *space*. Thirdly, the patterns of the social have been conceptualised through the notion of *multiple objects*. In this mode of analysis, an object is analysed as an assemblage of practices, that is a set of ways in which the object is 'done' or performed. The three different conceptualisations of performance are the primary theoretical tools, which I carry to my analysis of my empirical material in the two following chapters.

In chapter five, I present four cases from my study of the adult team. These cases form a chronological story that traces the initial discussions about the team project, the work of subdividing the team into three smaller units, and the subsequent fate of this arrangement. In parallel with the presentation of this story, I do some initial analytical work by imputing a number of 'patterns', 'logics', 'programs', or 'performances' to the material. The patterns which I articulate in the initial analysis are akin to performance-as-modes-of-ordering. At the end of chapter five, I argue, that the modes of ordering in each of the four cases combine into the performance of a particular kind of space. The argument is thus that a different kind of space is performed in each of the four cases. In continuation of this, I describe the kind of work that maintains each of the spatial configurations as well as the kinds of work that produces a shift from one configuration to the next.

In the chapter six, I critically review my earlier depiction of my account as a network. At this point I argue, that my key notions of spatial configurations and modes of ordering are *mutually implicated* rather than organised in a network of superior and subordinate entities. Drawing on this image of implicatedness, I introduce the multiple-objects-version of performance as an additional theoretical resource, which can feed on and feed the previous conceptualisations. With this additional theoretical resource I embark on the

analytical strategy of following a number of objects as they are translated from one spatial configuration to another. This analysis explicates a number of interdependencies as well as antagonistic relations between the spatial configurations.

In chapter seven, I summarise the argument and discuss some possible implications. In continuation of the previous analyses of interdependencies between the spatial configurations, I argue that the obduracy of these 'blocks' in part depend on the development of temporary techno-social arrangements. A crucial aspect of the development of competence in the team project is thus the construction of a series of short-lived arrangements that prevent 'blocks' such as managerial rights and professional authority from colliding catastrophically. The assertion that temporary arrangements are crucial to the performance of 'blocks' suggests a supplement to the research agenda of science and technology studies; previously this field has focused almost exclusively on objects that are (or aspire to be) durable. Finally, I outline two methodological procedures, which may guide the investigation of temporary techno-social arrangements.

Chapter Two

On the Construction of Facts in Social Science

In the introduction, I described my access to the team project and how I collected 200 pages of field notes. The question, which I will address in this chapter, is what to do with this stack of paper. How is it possible to combine these numerous scattered pieces of information into a coherent account? Being a constructionist, I am of course not trying to make a too singular, too grand, or too coherent narrative. But I still must bring some measure of order to my pile of notes.

But what exactly is so difficult about it? Steinar Kvale (1994) suggests one answer. He has written about a question, which he sometimes gets from his students. The question is this: How do I find a method to analyse the 1000 pages of transcribed interviews, which I have gathered? Kvale's answer is "Never put yourself in a situation, where you can ask this question". That is, do not collect this amount of material!

Kvale is undoubtedly right that sheer quantity will cripple the researcher's ability to deal with the material. But I think there is another and more fundamental problem in qualitative research, a problem that I consider myself faced with even though my material is well below 1000 pages. The problem is how to combine different types of data. I will call this *the combination problem*.

An example from my own material will illustrate this. From the long list of observations during one day, I can randomly pick out these four:

- The tables in the meeting room are placed in a horseshoe formation.
- The chief consultant has been working in the consulting firm for 13 years.
- The team manager suggests that the team should be divided into geographical subgroups.
- A home advisor asks for another team meeting, where he can explain the organisation of his professional group to the rest of the team.

I cannot imagine that these four pieces of observation make a whole lot of sense to the reader. And that is exactly the point. Data[1] have to be connected, framed, or combined in some way in order to become a coherent, meaningful account. The question is how we as social scientists manage to do such combination work? How does one link a request, a suggestion, a piece of bibliographical information, and a particular arrangement of furniture? What are the resources and methods for associating the numerous heterogeneous elements that are collected during a field observation?

To amplify this question, I will make a contrast to a very explicit and elegant example of data combination. The example is drawn from the teaching of natural science in schools. When students have been introduced to the Gas Law ($P \cdot V = N \cdot k \cdot T$) most of them are able to juggle completely different types of data, such as pressure, volume and temperature. With this formula the students seem to know *what* can be fitted together, *how* to fit these entities together, what the *outcome* of this combination is. The combination of heterogeneous data is thus, in the context of schools physics, a relatively simple but highly effective routine. This leads me to yet another formulation of the combination problem: Do we, the social scientists, have any magic formulas? And if we do, what are they?

A Case Study of the Combination Problem - Latour & Woolgar's Construction of Facts

Although social science texts that report on field studies may be extremely different there are certain textual moves, which can be anticipated. One would always expect a number of different types of data to be introduced, and one would always expect these data to be combined in some way or another in the course of the text. For this reason it must be possible to dissect a social science text line by line in order to reveal the combination tricks or magic formulas, which are used by the author.

In the following, I will apply this investigative procedure, this *reverse sociology*, on a particular social science text. The text is chapter two in Latour & Woolgars book "Laboratory Life - the construction of scientific facts" (1979/1986). This chapter is an account of the daily practice in a

[1] In this chapter I talk about data and ontology (or theory) as two different kinds. This is only partially intended. When two entities are combined in a specific event, one of them may figure in the role of substance (data), while the other may figure in the role of form (ontology). But, since all data are theory-impregnated, the data-entity has already played the role of form in relation to other substances. And since any theory will be the object of later interpretation, the theory-entity will later play the role of substance. So when I talk about data and ontology I am not referring to inherent qualities, but to relational identities in particular events. For similar arguments see Latour (1999, chap. 2) or Massumi (1999, chap. 1).

neuroendocrinological laboratory in California, based on an extended period of participant observation by one of the authors.

Latour & Woolgar's text is not an arbitrary choice. It is, for several reasons, a fertile ground for an exploration of the combination problem. First, it could be argued, that the text is an extra-ordinarily successful example of data combination; it draws on a broad spectrum of empirical material, and it concludes with a network-image of scientific fact construction, which is, even today, highly influential and frequently referenced in the field of science studies. So there is reason to believe, that Latour & Woolgar handled their combination problem well, and that something can be learned from the way they did it.

Second, the text makes no attempt to disguise the combination work. On the contrary, Latour & Woolgar make a virtue of presenting their research as an active ordering process rather than a neutral reporting of facts. To emphasise this constructionist perspective they have invented a fictional character, which they call the anthropological observer. The text unfolds as a description of the observer's bewilderment at his first encounter with the laboratory, his attempts at gathering information, and his work to create a meaningful account. This account is of course *gefundene Fressen* in the context of my discussion of the combination problem.

Third, the text itself directly addresses the issue of how facts are constructed. In due time, I will argue that the network-metaphor, which Latour & Woolgar develop, is also applicable to the construction of facts in *social* science.

As I said before, Latour & Woolgar analyse how facts are constructed by natural scientists. In my analysis, I will piggyback on Latour & Woolgar account in order to explore how they, a couple of social scientists, make *their* facts. More specifically, I will analyse three different methods, which Latour & Woolgar's observer uses to combine data. First, he combines the data into a *description* of the laboratory. Second, he sets up a *functional explanation* of the laboratory practice. And third, he orders his data into an account of the laboratory as a 'knot' in a large *network* of laboratories. The three methods are used consecutively; the result of the description is reworked by the functional account, which is again re-ordered by the network image. In the course of this, new data types are continually added and the scope of the explanation is enlarged. In the following, I will track this combinatory accomplishment step by step.

1. Description

The very first thing that the observer notices as he enters the lab, is what he terms 'the striking distinction' between two areas:

> One area of the laboratory (section B [..]), contains various items of apparatus, while the other (section A) contains only books, dictionaries, and papers. Whereas in section B individuals work with apparatus in a variety of ways: they can be seen to be cutting, sewing, mixing, shaking, screwing, marking, and so on; individuals in section A work with written materials: either reading, writing, or typing. Furthermore, although occupants of section A, who do not wear white coats, spend long periods of time with their white-coated colleagues in section B, the reverse is seldom the case. Individuals referred to as doctors read and write in offices in section A while other staff, known as technicians, spend most of their time handling equipment in section B. (Ibid, p.45)

The procedure, which the observer uses to produce this description, takes its point of departure in a particular type of data: physical space. This type of data is divided into A and B, and subsequently a number of other, subordinate, data types are sorted under these rubrics.

Data type	**Property**	**Property**
Physical spaces *(superior)*	***Section A***	***Section B***
Objects *(subordinate)*	books, dictionaries...	apparatus
Work processes *(subordinate)*	read, write, type	cutting, sewing, mixing..
Clothing *(subordinate)*	do not wear white coats	white coats
Placement of people *(subordinate)*	occupants of A spend time in A and B	occupants of B spend time in B
Naming of people *(subordinate)*	referred to as doctors	referred to as technicians

Figure 1. The structure of the description

Evidently, the observer manages to combine a number of data types with this description. His method is to distribute the properties of the subordinate data types under the superior data type (physical space). In this process the subordinate data types are ordered in a way that supports the A/B-distinction which was the starting point of the description.

If we take the combination of physical space and work processes as an example, the observer's method can be described by to steps:

1. Work process is differentiated into a number of properties:

   Read, write, type, cut, sew, mix...

2. The properties are distributed according to physical space:

   Section A [read, write, type] vs. Section B [cut, sew, mix...]

This seemingly naive description is a highly efficient way of combining different data types. Within a few lines at least six different data types are tied together with the effect that physical space seems like a well-established fact in Latour and Woolgars text. A fact that is supported by a long series of observation data.

Description as a combination method is not only effective; it is also low cost. Let us assume that the temperature, the flooring, and the chronology is exactly the same in section A and section B. Would this ruin the observers description of the "striking difference" between A and B? Certainly not. A description can be maintained as long as just some data types can be enlisted to support the difference. From the example we can also gather that not even a clear distinction is necessary. The description is not ruined by the fact that occupants of A sometimes visit B, while the reverse is seldom the case. So from this short analysis it seems safe to conclude that when it comes to descriptions, almost anything can be combined!

But precisely because description is such a quick and effortless method of combination, it is easy to produce alternative descriptions. With the observer's data one could have picked "work process" as the superior data type. A distinction between mental labour and manual labour could then have been drawn, and the properties of all the other data types could have been organised under these headings. The description would now take the following form: "There is a striking distinction between mental labour and manual labour in the laboratory. Mental labour is carried out in the offices by

doctors with the aid of books, while manual labour is done by the technicians, in the bench with the aid of apparatus". Keine Hexerei, nur Behendigkeit!

The combination work of description is a useful first step, because it helps the researcher get beyond his initial stage of bewilderment, as he confronts a sizeable and diverse material. However, description is more than that. It is a necessary prerequisite for establishing an explanation. If data are not made data about something, then the text makes no sense. Some kind of active ordering, which in the practice of social science, is achieved with the aid of concepts, is necessary to move beyond the meaningless chaos of the "raw" data.

The observer's choice of physical space as the organising point of departure have particular consequences; It appears below, that observer's next move is to raise the question: What is the relation between section A and section B? This question can only be raised because A and B have been constructed as realities through the description. The description constructs particular realities, and with that particular possibilities for and constraints on the questions that can be asked in the further investigation.

I have shown that the description could easily have taken a different starting point. This, however, was not meant to indicate that the observer's choice of physical space was arbitrary. Anthropology has a long-standing interest in the physical structures created by different cultural groups. It is therefore no surprise that Latour & Woolgar's "anthropological observer" selects physical space as his point of departure. An imaginary "psychological observer" would have been more inclined to select different types of individual acts or psychological functioning as his point of departure. In this case, the distinction between mental and manual labour would be more likely.

So the naive description draws on and reproduces particular scientific traditions. Particular realities are constructed through this, and these realities enable and constrain the further investigation. Description is simultaneously light and heavy. On the one hand it is a quick and effortless juxtapositioning of data types. On the other hand, description is a moment where scientific traditions heavily manifest themselves in the selection of a superior data type, and in the use of all other data types as means to construct the reality announced by this superior data type.

2. From description to function

As I argued above, academic opponents and other sceptics can easily set up one or more alternative descriptions. They simply have to select a new superior data type. For that reason pure description rarely suffice as social

scientific facts. So ambitious social scientists like Latour & Woolgar rapidly move on to more advances types of combination work.

The observer uses the description to pose the next problem: What is the relation between A and B? This problem he attempts to solve by comparing the laboratory to a factory and to an administrative agency. However, these comparisons make no sense; The papers that move from B to A in the laboratory can neither be seen as production reports (as in the case of a factory) nor are they material to be processed according to particular rules (as in the case of an administrative agency).

Although the comparisons yield no direct results, they do inspire the observer to regard the laboratory as a unit with a particular *function*. The participants in the laboratory are sympathetic to this functional perspective, and they inform the observer that the function of the laboratory is the annual production of about forty scientific papers.

The observer's next move is to investigate how these articles are produced. His attention is caught by the office desk of one of the doctors. On the left side of the desk there are open books and periodicals. To the right there are curves, diagrams and tables, which have been produced in the laboratory bench. The observer remarks: "*It is as if two types of literature are being juxtaposed*: one type is printed and published outside the laboratory; the other type comprises documents produced within the laboratory.." (p.47, emphasis in original). Juxtapositioning takes place, for instance, when an article is drafted: A number of other articles are quoted, and particular statements from these articles are discussed and challenged by means of the documents produced within the laboratory.

The observer can now conclude that the product of the laboratory is constructed through juxtapositioning of external literatures with internally produced documents. Thus the relation between A and B is, that section B produces the documents that are used in section A. But the observer still needs to understand exactly *how* the internal documents are produced.

His next step is to move to the laboratory bench, where he makes a number of observations of the work processes from the preparation of an experiment to the drafting of the pieces of paper that end up on the doctor's desk. He watches laboratory technicians make a number of careful registrations before an experiment. He watches how rats are given injections, how samples are taken from these rats, how the samples are placed in tubes, mixed with chemicals and refrigerated. Later he sees the samples being placed in a machine that produces sheets of figures. These figures are used as input to a computer that prints out a data sheet, which is finally transformed to a curve

by a technician. The paper with the curve is the document, which is brought into section A.

The observer has now described the laboratory as a productive unit: He has identified the product, and he has outlined the production process from rats and chemicals in one end to finished articles in the other.

From the above account, we can now analyse how the observer constructs a *functional explanation*. The first step is to evoke the idea that his object of explanation is functional; That is the idea that the laboratory serves a particular goal, and that this goal explains the laboratory's organisation and practice. This is a fairly easy step for the observer. Firstly, because ideas of functionality are widespread in our culture (this is how we understand factories and administrative agencies). Secondly, because the participants themselves think of the laboratory as functional; without further ado they point out the scientific articles as the product of the laboratory's functional working.

After the product has been pointed out, the next step is to move backwards from the final product to the earlier construction processes. The explanation is successful if an unbroken production chain can be established; Output from the first production event should be input to the next and so on and so forth; until the final product.

It is clear that a functional explanation combines a number of data types: work processes, locations in the laboratory, machines, documents etc. But just as in the case of the naive description, there is no magic formula, which prescribes that certain data types go together in a certain way. The data types are merely combined by means of the notion that particular *production events* presuppose each other in a particular order. The publication of an article presupposes that internal and external literatures have been juxtaposed. The juxtapositioning presupposes that the internal literature (e.g. the curve) has been produced. The existence of the curve presupposes that sheets of figures have been printed out from the computer, etc.

Every single production event is a compound. As an example, the observer's first event contains the doctor (a type of person), his desk (a type of furniture), articles and data sheets (types of literature), juxtapositioning (a type of work process) and his office (a type of physical space). An event is thus the combination of all the types of data, the observer sees on one particular occasion. In other words: proximity in time and space is what combines a number of data types into an event. Thus the construction of an event does not require any translation between data types: The event is constructed through the observation.

I argued above, that descriptions are effortless because there are almost no limits as to where you can start and which data types you can enrol. This lightness does pertain to the functional explanation. First, the observer is forced to start with the final product. Second, he is forced to relate to the participants' idea of what the final product is. Third, the functional explanation project generates a series of questions that he must answer: How is the product assembled? Where did the parts come from? How were the parts produced? To answer these questions he must seek out events and produce some answers from these events. He is literally forced round the house in order to piece his explanation together.

In every single event, the observer excerpts those particular aspects that can be interpreted as contributions to the function of the laboratory. In this way, the events and data types, which are used, are made synonymous with their contribution to the function. Obviously, this focus on functionality implies that many other things are brought out of focus. If an event contributes to the function it is noted. But if the event or parts of it do not contribute, it is passed by in silence. So production events are the only kinds of events that are represented through this method. The functionality of the laboratory is an explanation, or a fact, that speaks on behalf of all the production events, that the observer has meticulously found, arranged in order and extracted the functional aspect of.

In the beginning of the text, the observer constructed the physical space by arranging a number of data types as sources of this reality. In a similar manner, he has now organised a number of data types as sources of the functionality of the laboratory. The functionality is constructed as a reality through making function re-present a number of data about the laboratory.

3. From function to network

The observer's third transformation of data expands the perspective from the specific neuroendocrinological laboratory to a comprehensive network of laboratories. To undertake this expansion, the observer introduces a particular theoretical concept, namely *phenomenotechnique*. This concept was developed by Gaston Bachelard (1894-1962), a French philosopher of science who was greatly inspired by the development of nuclear physics in the first half of the 20th century (Castelão-Lawless, 1995).

Bachelard claims that modern science does not discover it's objects (such as the quark) but rather *constructs* them in laboratories through the use of advanced technology. Consequently, it makes no sense to talk of the objects of science independently of the technology through which they are realised at a particular historical moment. The reality of science is not objective in itself

but a phenomenotechnical reality consisting of particular technical and social arrangements, which enable the construction of particular objects.

Inspired by the concept of phenomenotechnique, the observer takes a closer look at the technical equipment of the laboratory. Borrowing a concept from Derrida, he describes the apparatuses as *inscription devices*, because each of them is able to transform a substance into an inscription on a piece of paper: a number, a curve, a mark or the like. The observer realises that every inscription device has been specifically invented to assist in the construction of laboratory objects. For example, the centrifuge developed by Svedberg in 1924, made it possible to create the notion of protein by allowing undifferentiated substances to be discriminated by spinning (ibid, p.65). By means of further investigation, the observer finds out, that the inscription devices have appeared in the literature of other scientific fields at earlier points in time. However, the debates over the inscription devices and the objects they construct have been ended a long time ago. The equipment of the neuroendocrinological laboratory can thus be regarded as the materialised result of closed debates.

In this analysis the observer makes use of Bachelard's concept to link three different types of data; (1) the objects of the laboratory or the phenomena appearing in the discussions among the scientists, (2) the technical apparatuses through which the phenomena are constructed, and (3) particular theories in other scientific fields.

The analysis is in agreement with the earlier functional explanation; with the concept of phenomenotechnique the observer depicts scientific debates and their materialisation in technical apparatuses as *prerequisites* for the functionality of the laboratory. In this way the analysis of apparatuses and their history supplements the functional explanation of the laboratory.

However, the observer carries this analysis even further. He argues that technical apparatuses in the form of inscription devices are not just input to the laboratory. When laboratory work succeeds, articles are produced, and in lucky instances particular scientific debates are closed. This results in the creation of a scientific fact, which can be made the basis of new inscription devices. Consequently, inscription devices are the prerequisites for as well as the outcome of laboratory activity. Input as well as output.

By this the observer creates a new image of the laboratory. Earlier he described it as an isolated functional chain. But now the laboratory is viewed as a junction in a *network*. So the Bachelard-inspired analysis starts by supplementing the functional explanation (add prerequisites to the function),

but ends up transgressing it by viewing the laboratory as something different from a closed functional system.

The image now evoked is that of a comprehensive network of laboratories, which over an extended period of time construct inscription capabilities, distribute them in the form of inscription devices, and make these devices the basis of new inscriptions. This network image is possible, because the observer, drawing on Bachelard, establishes an essential similarity between the laboratory input (technique-that-constructs-particular-objects) and output (theories-of-particular-objects-which-can-be-materialised-in-technique). The establishment of this similarity between input and output is the move that enables the observer to use his earlier analysis of a single laboratory to depict the entire network.

The implicit argument is this: How do the other laboratories produce the input that we receive? Answer: *In the same way* that this laboratory produces the output, which is passed on to the other laboratories.

So by using the phenomenotechnique to establish a similarity between input and output, the observer establishes similarity between the construction work in this laboratory and in all other laboratories. He can now depict the entire world in the image of the laboratory, and he can make claims about many places even though he has only been in one place. This final reorganisation and combination of data is thus another widening of the scope of the account, and a fairly remarkable one at that.

A Constructionist View of Facts

In the beginning of this chapter, I asked the question: How do social scientists manage to combine heterogeneous data into a coherent account? Through my dissection of Latour & Woolgars text, I came across three different methods by which the observer handles the combination problem. Each of these combine data in a specific way thus creating three different images of what the laboratory is - three different ontologies.

The observer established a *description* by making one data type superior (physical space) where upon a number of other data types were organised accordingly. The *functional* explanation was created by assuming that the laboratory is functional, then point out the product (articles), and finally trace a chain of production events leading to the product. The *network* explanation was produced through the engagement of a theoretical concept (phenomenotechnique) that created an essential similarity between laboratory input and output. This allowed for an image of the laboratory as a part of a network rather that just an isolated functional system.

The observer's combination work oscillates between moving the ontology and moving the data. In the *description* he establishes the ontology by distributing the subordinate data types. In the *functional* explanation he sets out with the ontological assumption, that the laboratory is functional, and subsequently he gathers the data that can substantiate this explanation. In the final part of the text he collects information on the technical equipment of the laboratory. This initially confirms an established ontology (the laboratory as a functional system) but later it enables the move to a new *network* ontology.

So the case contains one example of ontology before data (function), one example of data before ontology (network), and one example of a more or less simultaneous establishment of the two (description). Consequently, the work of the observer is neither simply inductive nor deductive. It is rather an ontological-empirical tinkering involving continual expansions and reorganisations of both ontology and data. This combination work associates more and more data types corresponding with a successive broadening of the account.

The observer's course of action is contrary to the standard recommendations of deductionists such as Yin (1994). According to Yin a successful case study depends on a specification of the ontological dimensions of the phenomenon *beforehand*. If a case study in progress discovers new dimensions of the phenomenon, the case at hand must be redefined as a pilot study, the original design must be altered, and the case study must start over.

Latour & Woolgars text, which is considered to be a classic within science studies, illustrates that ontological changes in the course of action are not necessarily a problem. On the contrary it is by virtue of the observer's continual introduction of new ontologies and reorganisation of the data that the scope of the text continues to increase. The ontological Puritanism and self-inflicted restraints of Yin is not necessarily a more productive strategy than Latour & Woolgar's ontological festival.

Transformative growth

There can be little doubt that the scope of Latour & Woolgars analysis increases through the text. It moves from the physical layout of a single laboratory to the image of a comprehensive network of laboratories. The question, however, is how to conceptualise this kind of growth.

One metaphor for the growth of social science could be the voyages of discovery in the 19th century. At this time the contours of the continents were known, but within the continents a number of white spots still awaited a

closer inspection. The purpose of these voyages was to specify the detail of what was already known in broad outline. This metaphor clearly doesn't cover the work of the observer; His initial establishment of the physical space is not followed by a stream of more detailed descriptions of space.

Another possible metaphor for social science could be the voyages of discovery *before* the 19th century. These expeditions did not fill in white spots; they discovered new worlds beside to the old one. This metaphor seems more suitable for the work of the observer. He first describes the physical space, then the function of the laboratory, and then the network relations. But the metaphor of a supplementary expedition is also seriously flawed. The different ontologies are in no way neatly juxtaposed, they rather seem to overlap and extend over each other. The idea of laboratory function is not a reality lying *next to* the physical space of the laboratory. The idea of function *incorporates* the physical space, making the latter a means to the function. Similarly, the observer doesn't position the-laboratory-in-the-network as a reality next to function. The function is incorporated in the image of the network and the data establishing the function are reorganised, to be evidence of the laboratory in the network. One example of this is the observation of the juxtapositioning of literatures. This piece of data is depicted as a production event in the functional explanation, but later it becomes evidence of the laboratory's engagements in a scientific network.

The development in Latour & Woolgars text is best characterised as *transformative growth*. Earlier ontologies and data are used as means to establish new ontologies and collect new data. Consequently, the observer does not cumulate knowledge in any simple, linear way. Through tinkering he reaches positions that can organise even more data types around even wider ontological claims. The process entails a continual abandonment of ontologies and continual reorganisation of data, in order to make them sources of new realities.

Ontologies as the inscription devices of social science

The concept of inscription device is undoubtedly a central point in Latour & Woolgars analysis. The laboratory constructs its scientific objects by means of inscription devices, and the distribution of these devices are constitutive of the network of laboratories.

There is a striking resemblance between the role of inscription devices in the laboratory and the role ontologies in Latour & Woolgars text.

One example is the ontological claim of the laboratory's *functionality*. The moment the observer accepts this claim, he is enabled to inscribe data in specific way:

- To formulate the question of what the product is.
- To extract the functional aspect of particular events, thus making them production events.
- To arrange the production events as a chain of production based on the idea that the product is assembled by a number of parts.

In this way, the ontology of functionality makes it possible to inscribe data that constructs the phenomenon of functionality. When these data are gathered and ordered into a chain of production, they are considered a direct indication of the 'underlying' functionality of the laboratory. The observer (and possibly the reader) is convinced that the laboratory is in fact functional.

My argument, then, is that 'functionality' is a phenomenotechnical reality constructed in Latour & Woolgars text in exactly the same way as the biochemical substances are phenonemotechnical realities constructed in the laboratory.

A further parallel between inscription devices and ontologies is their ability to be distributed in networks. Latour & Woolgars analysis is only possible because they apply a number of ontologies from common sense of western societies and social science literature. Among these 'space', 'function' and 'phenomenotechnique'. However, Latour & Woolgar themselves also produce new ontologies. The most significant one of these is the notion of the network, which has later been seized, utilised and transformed by many other social scientists (see Law & Hassard, 1999).

Latour & Woolgars image of natural science can thus be applied to social science as well: The facts of social science are not discoveries but constructions dependent on inscription devices in a network[2].

Some principles of a constructionist methodology

My reading of Latour & Woolgar is obviously not an attempt to make a traditional academic critique. I have not searched for internal inconsistencies in the text, and I have not attempted to deconstruct their analysis by relating it to other studies. To the contrary, I have tried to positively account for the relatively simple and mundane steps that are used to combine data into a

[2] The present analysis of the combination work in Latour & Woolgars text is not a discovery either. My analysis is a construction that has been established through the meticulously application of a number of ontologies, such as the idea of a combination problem and the idea of different data types.

coherent and persuasive account. Against this backdrop, I will extract three methodological principles, which I will use as guidelines for my own construction of facts.

Ontological pluralism. The analysis illustrates that a continual development of the ontology within the text can be fruitful. Earlier ontologies should not be regarded as mistakes, but rather as necessary ordering attempts that pave the way for later and more comprehensive ordering efforts. Consequently, the deductionist recommendation of adopting one particular ontology in the design phase is rejected.

Empirical pluralism. The analysis demonstrates that a study can expand its scope and increase its strength by employing a plurality of data types. Heterogeneity is an advantage, not a disadvantage. This observation leads to a rejection of the widespread tendency that social scientific subdisciplines attempt to purify and monopolise a small number of data types.

Social science as net-work. The individual researcher does not discover the world anew and by his own strengths. His social scientific facts are constructions enabled by the ontologies / inscription devices available. Social science should thus be regarded as a comprehensive network, in which combinations of ontologies and data are continually transformed.

The Combination Problem in the Methodological Literature

Having formulated my general view of fact construction in social science, I will now broaden my search for combination methods that are applicable to my data. An obvious place to look is of course the literature on methodology. This literature explicitly attempts to define guidelines for collection, analysis and interpretation of data. But rather surprisingly I have found, that the combination problem tends to slip out of this literature (see Elgaard Jensen, 1999b).

Deductionists recommend that the ontological dimensions of the phenomenon be defined in the design phase. This means that the types of data, and the way in which they should be fitted together is treated as a theoretical discussion, which should be solved beforehand (e.g. Yin). And this means that the deductionists have very little advice to offer a researcher who has already collected a pile of heterogeneous data.

Inductionists, on the other hand, maintain that combination work must be done along the way. But they have an unfortunate tendency to describe this work as unique in every single case. In the words of Norman Denzin:

> "Every action in the field provides new definitions, suggests new strategies, and leads to continuous modifications of initial research designs. Like other forms of interaction, sociological research reflects the emergent, novel, and unpredictable features of ongoing activity [..] To summarize, methodological triangulation [i.e. the combination of different types of data, TEJ] involves a complex process of playing each method off against the other so as to maximize the validity of field efforts" (Denzin, 1970, p.310)

In this account, Denzin emphasises the particular aspects of the research process that are impossible to investigate, and he omits those aspects that could be analysed more closely. He is undoubtedly right, that research like other forms of interaction has emergent features. But what he doesn't mention is that research - again like other forms of interaction - displays structural, ordered, and patterned features, which can be analysed. And this analysis might, when its object is scientific work, be passed on in the form of combination tricks or inscription devices.

Of course, the rigorous deductionists and inductionists, whom I have mentioned here, do not exhaust the methodological literature. A number of authors have attempted to outline practical, explicit and systematic methods which can be applied in qualitative studies. These methods are neither a matter of theoretical preconceptions, nor are they novel, unpredictable features of the research activity.

Miles & Huberman (1994) are probably the best known representatives of this practical and explicit approach to data analysis. They present a number of procedures, which will allow the researcher to order and combine data. I will briefly present some of these methods, which I have used in my own combination work.

Displays. One of Miles & Huberman's key recommendations for initial data analysis is the use of matrix displays. The key purpose of this is to cross two (or more) dimensions of data to see how they interact (ibid, p 239). Among the numerous examples described in the book, Miles & Huberman presents a matrix display of events in a school system related to the implementation of a reading program (ibid, p.93-94). This table has consecutive time periods along one dimension, and different levels of the schools system along the other (from state level to individual schools) along the other. This and other matrices systematically combine data in a way that closely parallels the work done by Latour & Woolgar's description. The ontology indicated by the

headline of a column ('time period X') is supported by the data in the cells below it. And the difference between this column and the neighbouring one is supported by the different data in the two columns.

Coding is another well-known data combination method. "Codes are tags or labels for assigning units of meaning to the (..) information compiled during a study. Codes are usually attached to 'chunks' of varying size - words, phrases, sentences, or whole paragraphs.." (ibid., p.56). Miles & Huberman distinguish between various types of codes. Descriptive codes merely attempt to label the activity in a particular section of the data. With interpretative codes the researcher tries to look 'behind' the events, for instance by attributing a particular motives to the actors. Finally, a pattern code is an attempt to indicate a particular recurring pattern or logic in the data. Irrespective of the type of coding, the procedure seems to be yet another practical and systematic way of managing the work of combining data with particular ontologies. Furthermore, an important benefit of the method seems to be that it makes the success and failure of the combination work visible. Through coding, it may become clear that certain ontologies can be supported by many pieces of data, whereas it may seem impossible to gather much support for certain other ontologies.

Memos. Miles & Huberman quote Glaser's definition of a memo. "[A memo is] a theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding (..) it can be a sentence, a paragraph or a few pages (..) it exhausts the analyst's momentary ideation based on data with perhaps a little conceptual elaboration"[3] The potential benefit of writing memos is that it allows the researcher to toy with a number of ideas of how to relate different ontologies and data. In this way, it may stimulate the ontological pluralism as well as the move toward more comprehensive orderings of the material.

The Combination Work in my Study of the Team Project

I will now turn to my own work of ordering and combining the heterogeneous pile of data, which resulted from my fieldwork. The following account will include practicalities about this work as well as reflections on my use of inscription devices, combination methods and forms of pluralism.

[3] Quoted from Glaser, B. (1978).

During the entire period of fieldwork I wrote *theoretical memos* of the sort recommended by in the Grounded Theory approach[4]. During the bothersome work of typing my field notes, I often got ideas of how to order the material. At these moments I wrote a memo on each idea or theoretical concept. Some of my memos also contained links to other theoretical concepts and some included empirical questions, which I might pursue on my next visits to the local centre.

One of my memos looked like this:

Memo 4
May 5th, 1999
Different constructions of the local centre

The local centre is constructed in at least four different ways in the introductory meeting for new teams:

1. Functional in relation to the users' needs.
Talk about the meaning of the centre to specific types of users.

2. As a place where a particular professionalism is exercised.
Talk about what is professionally acceptable - references to methods, casework and educational background.

3. The centre as a point in a statistical distribution.
The centre is compared to other centres or municipalities, or it is argued, that things are possible elsewhere. Inscription devices: usually surveys or reports from consulting firms.

4. The centre as a political signal
The centre is taken to 'emit' particular signals, which the politicians are more or less satisfied with.

Figure 2. Example of a theoretical memo

I believe the continual writing of memos provided a good opportunity for experimental writing about the material. It was, so to speak, a playground for my empirical-ontological tinkering. It allowed me to get a clearer sense of which combinations, I was able to make. But it also made me recognise that I had a long way to go. There were vast amounts of material that I simply did not know what to do with, and I had many theoretical ideas, which I could only combine with very little data.

[4] See Glaser (1978) or Strauss (1987, chap. 5).

An additional idea from the methodological literature, which tried I out, was the process of *coding*. Using the N'vivo software, I worked through field notes from a number of events. My codes I used were inspired by the analyses of construction work in early actor-network theory (e.g. Callon 1986a, 1986b; Latour 1987). From this I drew a number of theoretical concepts/codes such as 'problematisation', 'interessement' and 'enrolment' (I will give a more detailed account of these in chapter 3). By and large, the exercise of coding turned out to be unproductive. It didn't yield very many new perspectives on the data, and it drained rather than raised my energies. In retrospect, I believe the problem was that I was too unclear about which theoretical interests I wanted to pursue in the material. And in such a 'fluid' situation, it is necessary to continually move the data as well as the ontology. But the former is much easier than the latter in the N'vivo software. For that reason the software felt more like a stifling and bureaucratic obstacle than a helpful organising tool. However, even though coding in itself didn't produce much, I think that this exercise also contributed to my continual work of figuring out, what could and what couldn't be constructed from my assemblage of data and theoretical ideas.

Further opportunities and obligations to order the material were created by the reference group, which was set up in relation to my project. According to our collaboration agreement (appendix 2) I was to write one report halfway through my observation period, and shortly after I finished.

In the first of these reports (Elgaard Jensen, 1999c), I chose to follow up on the idea that reality is constructed and inscribed in various ways. More specifically, I wanted to investigate how the four different professional groups construct 'the user'. I did this by gathering examples of what kind of information or 'dimensions' the social workers within the professional groups would use in their daily talk about the users. In the table below, I have listed some examples from the report[5].

[5] I will give a more detailed introduction to the professional groups in chapter five.

Profes-sional group	Type of information about a user (i.e. ontologies/inscription devices)	Examples
Home-helpers	The services a client should receive.	"cleaning" "shopping" "washing clothes"
	Obstacles in the apartment	"there are bugs again" "a lousy vacuum cleaner" "there is a carpet"
	If the client is dangerous	"he's crazy - only men are allowed in his apartment - he can only receive help if he has taken his medication"
Case-workers	If the user is in the right office.	"what is you social security number?" "your case is still in X - you have to go to the other end of the building"
	The client's usual conduct in relation to the caseworkers	"she forgets the receipts" "he makes bad excuses" "he is very timid"
	How the user is 'in the system'	"on supplementary benefits" "on early retirement" "the case hasn't been followed up"
Home advisors	The physical location of the users (residents in supported housing)	"he is hospitalised with pneumonia" "he wasn't at home yesterday - I wrote him a letter"
	Evaluation of the condition of the user	"she is intelligent but very fragile" "he is self-destructive"
	The extent to which the user can handle particular situations	"making a schedule for his day is a disservice - it becomes a cross for him" "the birthday went well" "he is willing to go down to one visit a week"
Support persons	The psychiatric condition of the user	"psychotic" "paranoid delusions" "doesn't recognise his illness"
	Conflicts with others	"complaints from the neighbours or lawyers" "he is perceived as threatening"
	The quality of the contact with the support person	"trust has been established" "the client if fearful" "the support person is allowed inside the apartment" "the client engages in talk about the past and the future"

Figure 3. The different professional groups' construction of the user
(excerpt from Elgaard Jensen, 1999c)

In many ways, this way of ordering my data was satisfying. It gave me an overview of the differences between the professional groups, which I didn't have before, and it was my most comprehensive and inclusive ordering of the data for the time being. In addition, several of the social workers told me that they recognised themselves in my description, and that they found it interesting to read about the other professional groups. However, there were also receptions of the report, which troubled me. In particular I was troubled by a comment made by a manager in the central administration of the FLMA. He said, that up to now I had described the different *professionals'* perspectives, but now I should move on to describe the *users'* perspective. What made me uneasy about this was the manager's assumption, that there was a 'true' user-perspective out there, rather than a series of different constructions of users[6]. To put it bluntly, I got the feeling that my constructionist analysis had been highjacked by a realist. My second worry was that my writing made it so easy for this manager to place himself outside my description. He could describe himself as not a part of the game, as someone who from a distance could point out that the users' perspective had been forgotten. I had no answer to this, since I had no analysis of the inscription devices that he, the manager, was employing. I simply had to face that I couldn't argue against his reading of the report. But I also decided that my next report would be more encompassing; I wanted to include management in the story.

In my second report (Elgaard Jensen, 2000b), I delineated two sets of actors in the social administration. On the one hand the social work professionals and on the other hand 'the organisational people'. The latter group, I defined as managers at various levels, central administrators and organisational consultants.

In this report, I attempted to track the project through three consecutive time periods. I took my point of departure in eight official goals of the team project, which were presented by the organisational people to the professionals at the introductory meeting. I then described how the goals were negotiated, achieved, abandoned, deferred or changed over the course of the three time periods. An excerpt of this analysis is presented below.

[6] Including the multiple, situated ways in which the users may inscribe themselves.

The organisational people's definition of the team project	The professionals' response in period 1	The professionals' response in period 2	The professionals' response in period 3
Vision: The user-centred administration	[cannot be contradicted]	do.	do.
Organisation: Teams as the key building blocks in the formal organisational structure	[an established fact before time period 1]	do.	do.
Organisation: Subdivision of the team based in differences in the users' needs. *(later addition: but geographical grouping is also acceptable)* *(later addition: but the professional groups are allowed to criss-cross the geographical grouping)*	[no comments]	Participate in a trial after managerial assurances about necessary resources, and the maintenance of professionalism.	Participate reluctantly in the trial - but only 5% of the working hours.
The role of the team member: The team members 'carry' the team's competence (later addition: but all professional groups maintain their core area)	[no comments]	emphasising professional differences	emphasising professional differences

Figure 4. The negotiation of team project goals (excerpt from Elgaard Jensen, 2000b)

I think, this report was enlightening in the sense that it allowed me to combine even more events, actors and observations into a coherent account. The report also turned out to produce a predominantly *negative* commentary on the team project. It seemed that a significant number of the managerial goals had not been achieved. Certainly, the project had succeeded on the level of changing the formal organisational structure (establishing teams on the organisational chart), but the impact on daily work in the local centres seemed very small indeed. I still believe that there is some point to this analysis, but I also grew more and more dissatisfied with it. On the face of it, my analysis was critical of management; it did not praise the managerial efforts, and it did not say that the team project was a success. But on a more fundamental level, my analysis *colluded* with a managerial perspective. It builds on the assumption that the officially stated project goals constitute a proper definition of what the team project is. This seems to be a rather limited and questionable ontological assumption. Among other things it leaves out the different non-managerial versions of what the project is. So I gradually arrived at the conclusion that I had given the managers too much in the second report, whereas I gave too much to the social work professionals in the first.

There was one additional thing, which made me uneasy about the second report. The description of the team project as a series of encounters between managers and professionals tends to paint a very 'humanistic' portrait of the team project. There is much focus on human verbal acts such as commenting and agreeing, but the non-human actors are not very salient in the analysis. It is almost as if the team project were merely an extended conversation between managers and professionals.

In chapter three and four, I will explore a series of theoretical resources, which I can use to move beyond the conversational metaphor of the social. The discussion begins with social learning theory, it then moves on to actor-network theory, and it ends with recent work on performance. In chapter five and six, I make the concept of performance the cornerstone of my final ordering of the data. In these chapters, I attempt to give a detailed and materialistic account of the 'play' between professionals and organisational people. My final account is thus an outcome of a long process of empirical-ontological tinkering. In this process, I have struggled in particular to expand my account to accommodate the managerial as well as the non-managerial, and the human as well as the non-human.

Chapter Three

Learning Theory, Its Problems and Its Challengers

Learning is probably the most researched and discussed concept in psychology (Gross, 1987) and in recent years there has been a wave of interest in the so-called social learning theories in social psychology (eg. Lave & Wenger 1991, Wenger 1998). A standard textbook definition of learning reads like this: "learning is a relatively relatively permanent change in behavior or behavioral potential, that results from experience". Relatively permanent change was certainly one of the outcomes of the team project, but the question is whether learning is the most adequate way to conceptualise this change. In the following, I will argue that it is not.

I begin this chapter by exploring various learning theories and their problems. I argue that learning theories all work by delineating *systems*[1] *of learning*, and that this underlying notion of system is problematic for a number of reasons. The critical discussion of learning theories leads me to explore an alternative metaphor for "relatively permanent change", namely that of the *network*. I present the use of this metaphor in actor-network theory, and I conclude by indicating some of the recent criticisms and developments of the network metaphor.

Systems of Learning

I begin the discussion of learning theory with some of the earliest work on learning, which also happens to be one of the first theories that is presented to psychology students. I am of course talking about Pavlov and his salivating dogs.

The organism as an adaptive system

Psychology students are told that animals are born with instincts that cause specific stimuli, such as the smell of food, to elicit specific responses, such as salivation. This innate schema is useful in many situations. But in a changing

[1] I use the standard definition of system as "any set or group of elements or parts (..) organized for definite purpose and in relation to an external environment" (Collins Dictionary of Sociology)

world too much pre-programming can also be inconvenient. This is where *learning*, in the form of classical conditioning, enters the arena.

Pavlov discovered that the salivation response can be linked to other stimuli than food, for instance the sounding of a bell. The by now well-known trick is to pair a conditional and an unconditional stimulus: sound the bell while serving the food. And after a few trials the dog will start salivating when it hears the bell, even though the food has not arrived yet. So the dog has learned to adjust its response to a feature, which is specific to the local environment: The fact that food and bell sounds come together in Pavlov's laboratory.

This is one of the marvellously simple and effective tricks that animals use to improve the fit with the environment. The genetic makeup constitutes a pre-programming, and on top of this, the animal adjusts its connections between stimuli and responses according to the specific conditions of the environment.

The analytical unit of Pavlov's theory of learning is quite obviously the organism. The organism is an adaptive system that receives input (stimuli) and emits output (responses). The contribution of Pavlov was to infer the learning processes inside the organism from close observation of input and output.

With this theory, the psychology textbooks can arrange all learning systems/organisms on a progressive scale. At one end we find simple organisms that are almost completely genetically predetermined. These organisms have an extremely limited register of learning. Somewhere in the middle we find pigeons, that have a fair amount of instinctual behaviour. But a pigeon can also learn to play table tennis if it is trained by a proficient learning theorist like B.F. Skinner. Finally, we have humans, positioned at the far end of the spectrum where instinctual behaviour is limited, and where the capacity for learning is greater than in any other animal.

By now, it is clear to the psychology students, that the strategies of learning and genetic adaptation are not equally good. Learning is a smart, flexible strategy that humans excel at. Genetic adaptation is crude, rigid and rather non-human. In later studies, the psychology student will find that a long list of psychological buzzwords such as identity, competence, personality and intelligence are closely linked to the human capacity for learning. So in the discourse of behaviorism and psychology textbooks, learning is good.

Systems within systems

There is, however, a further feature of behaviorism that deserves mentioning. Learning is about maximising the gains for the organism. So Behaviorism depicts the individual as an individualistic opportunist. The learning organism is synonymous with *economic man*.

Numerous authors before and after behaviorism have rejected the idea that the world can be depicted as the war of all against all. There seems to be a very widespread sentiment, that there is something more to the story; The world cannot and should not be contained in the notion of selfish (albeit smart) organisms. And so there have been many attempts to draw up a bigger picture in which behaviorism could be engulfed[2].

A prominent example of this is the sociological theory of Talcott Parsons[3]. Parsons set himself the task of explaining the social order, and he wanted to do this without falling back on the assumption that every individual is simply pursuing his own interests. Parsons' solution to the problem of social order was a grand hierarchical systems theory.

The society is viewed as an encompassing system with a particular set of functional prerequisites, or system needs. These needs give rise to a number of social systems and institutions. The institutions in turn encompass a number of positions furnished with particular roles and norms. Parsons conceptualised the newborn individuals along the lines of psychodynamic theories. The individual is born with a bundle of drives, needs, and instincts. However, through the socialisation in the family and the education system, the growing person learns the prevalent values, and comes to seek fulfilment in societally acceptable ways. Parsons thus views the individual as a role player in a basically fair and meritocratic system. The individual adapts to the norms of society and he is rewarded by social acceptance and encouragement.

The stories of behaviourism (and cognitivism) fit nicely into the Parsonian framework. The learning theories explain the technicalities of *how* organisms are conditioned to the environment. The Parsonian theory - in principle - explains *what* the individual has to learn: the socially acceptable norms and roles. Furthermore, Parsons explains *why* roles must be learned: because they fulfil system needs and thus in the last instance contribute to the maintenance of the social order.

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[2] In this account, I am leaping over later versions of behaviourism as well as cognitivism. These traditions are similar to early learning theory in that they take the individual organism to be the learning system. Furthermore, these theories also define 'games' in which humans are the most advanced.

[3] The following account of Parsons' theory is based on Layder (1994)

So here we have a learning theory that engulfs the learning system of the individual organism in the larger the social system. Learning thus becomes a matter of socialisation, of ordering the individual parts within the societal whole.

Parsons' functionalist theory has been criticised on a number of counts. First of all it has been pointed out, that Parsons' theory paints a far too harmonic and conflict-free picture of society; Conflicts between classes, races or genders are conspicuously absent. In continuation of this, functionalism has been accused of an over-socialised conception of social action. Human action is merely seen, as adaptation to societal roles. No play, creativity, cynicism, obstruction, indifference or fooling around. Man is rendered a cultural dope. One way to sum up the criticism is to say that Parsons' *organismic* metaphor of society was questioned. Parsons takes individuals, institutions and the rest to be parts of an ordered whole. The opponents say, that these entities are much less ordered and much more in conflict than Parsons' systemic theory suggests.

The broad critique of functionalism also had an impact on learning theory. In fact, the critique hit very hard. In the first decades of learning theory, adaptability was regarded as the brilliant quality that distinguished humans from lesser creatures. But following the critique of functionalism, adaptability was seen as the very mechanism by which humans could be made obedient, docile followers of the existing social structure[4]. Thus Parsons might have rescued learning from a discourse of economic man, but only to enrol learning in a profoundly conservative and normative discourse of assimilation to societally given norms and roles. So something had to be done, if learning was to be rescued from the functionalist embrace. This is what the next series of learning theories are about.

Systems of social learning

On the American academic scene, Ethnomethodology and (a revived) Symbolic Interactionism were the most important successors to the Parsonian dominance in the 50's. The conceptualisation of social action in these theories takes its point of departure in human face-to-face interactions. Emphasis is placed on the emerging, negotiated and situated character of human actions. Accordingly creativity, mutual recognition, and co-ordination of actions are generated through interactional work. So the productive creativity, as well as the credit for maintaining some measure of social order, is reclaimed from the social system and given back to relatively small groups of interacting humans.

[4] This critique was raised in various forms by a number of social psychologists, eg. Dreier (1979), Holzkamp (1979), Mørch (1985), and Brückner (1979).

In terms of learning, these theories also break new ground. In behaviourism and functionalism the adapting system is the individual organism. But Symbolic Interactionism constructs a new adapting and generative system: *the interacting group of humans*. This novel entity is the basis of the *social learning theory*[5] that has been developed for the past two decades.

"Situated Learning" by Lave & Wenger (1991) is generally considered the seminal book in social learning theory. Lave & Wenger discuss the apprenticeship-style learning, in what they call *communities of practice*. Five empirical examples are presented: A group of tailors in Nigeria, quartermasters on a US navy vessel, a unit of Alcoholic Anonymous, Butchers in an American supermarket and Midwifes on the Mexican Yucatan peninsular. On one hand the concept of community of practice draws on the Marxist idea of productive, human practice (Lave, 1997). A community of practice is defined by doing and producing something together. On the other hand, there is a link to Symbolic Interactionism's concept of social worlds. Communities of practice imply some sort of continuous communication, negotiation of meaning, and shared discursive repertoires (Wenger, 1998).

Thinking in terms of community of practice, the individual is no longer depicted as an isolated receiver of pre-structured knowledge. The individual in a community of practice is a *participant*. She performs tasks that are useful contributions to the whole, and she takes part in the negotiation of meaning. Lave & Wenger try to capture newcomers' specific mode of engagement with the term: *legitimate peripheral participation*. This term indicates that the newcomer is initially given relatively easy tasks, where errors have relatively minor consequences (peripherality). But these tasks are nevertheless useful contributions to the community (participation), and therefore the person is granted acceptance as a participant (legitimacy). In the process of doing relatively simple tasks, the newcomer is placed in a position where she can observe, hear about and get a feel for more mature practices. So legitimate peripheral participation entails access to learning resources that are relevant to the person's future participation. Her position should not merely be viewed in terms of the simple tasks, which she carries out at the moment. The present position is a part of a learning trajectory that leads to more and more involvement in the community. Consequently, the position is also constitutive of her *identity* as a member of the community of practice.

With this account of learning in practice, social learning theory can draw up a number of sharp contrasts to cognitivism and functionalism. According to social learning theory, the *process* of learning is not disembodied

[5] Lave (1988), Lave & Wenger (1991), Wenger (1998).

appropriation but legitimate peripheral participation. The *content* of learning is not 'abstract' propositions but expanded participation in lived communities of practice. The *learner* is not an information processing individual brain, but an embodied, positioned participant. The purpose or *telos* of learning is not socialisation and inculcation of ready-made knowledges, but engagement in the production of the world.

So briefly put, social learning theory reworks the concept of the learner, the knowledge, the process of learning and the telos of learning. Learning is once more rendered a good endeavour.

After System: Blurred Boundaries of Content, Agent, and Location

Up to this point I have constructed a developmental story of learning theories. I have introduced the early conceptions of learning as individual adaptation. I have described the structural-functionalistic embrace of this notion, relegating individual learning to a supportive process in the sustenance of more encompassing systems. Finally, I have outlined the latest version of the learning system, the community of practice, which is advanced by social learning theory in an attempt to restore learning as a worthy and indeed admirable human endeavour

This story may be read as a search for the proper size of the learning system. The unit of behaviorism was too small; there is more to the story than the individual organism. The unit of structural functionalism was too big. It created a whole out of parts that were really not parts, but entities in some measure of conflict. Finally, social learning theory seems to have got it right. It outlines a learning system beyond individualism and at a safe distance from a consensual view of society.

However, as I will argue in the following, there are reasons to believe that the learning system of the community of practice isn't right either. In fact, I will argue that the very idea of systems of learning is problematic and that the hunt for the properly sized learning system will never achieve its goal. The reason is that the boundaries of learning systems are leaking. And that is the case for any size of learning system. In the following I will examine some of these boundaries: the boundaries of content, agent, and location.

The boundary of the content of learning

In the history of learning theories, the *content* of learning seems to be continually expanding.

Behaviourism refused to deal with anything but observable behaviour. Cognitivism added cognitive schemas related to internal reasoning and verbal accounting. Structural functionalism added norms, values and roles. Social learning theory added participation in communities of practice, which entails a complicated web of relations between the community and the individual. Learning is thus made a ubiquitous and integral aspect of practice (Lave&Wenger, p.30-1). But the expansion of the content does not stop here: In the mid-90's social learning theorists considered the community of practice to be the locus within which learning should be studied. Today, these authors also focus on individuals' multiple memberships and trajectories across different communities (Dreier 1999), and they start to think about constellations of a number of communities of practice (Wenger).

The broadening of scope makes it increasingly hard to pinpoint the system of learning. I believe there are two sources of this hardship. First, the *part*icipating humans are not adequately defined as 'parts' of the present community. They are also and simultaneously parts of something else. Second, the community of practice is not adequately defined as 'a whole', because it exists in a constellation of other communities of practice.

I suggest there is a pattern here, a pattern which social learning theories share with the earlier versions of learning theory. When a theory of learning makes its necessary first move - delineating a learning system - two problems will eventually follow. The parts will 'refuse' to be parts; Social learning theory finds that so-called *part*icipants are engaged elsewhere; Critics of Parsons point out, that the so-called functional parts of a social system are in inner conflict. The second problem for any system theory is that the whole 'refuses' be a whole; the organisms of early learning theory are not adequate wholes, because learners are related to communities; The communities of social learning theory are not adequate wholes, because communities are related to constellations of communities and so on.

The point is this: When attention is paid to the content of learning systems, it seems that learning theories are continuously sliding between system sizes rather than approximating 'the right one'. It also seems that neither the parts, nor the putative wholes will remain in their theoretically assigned places. The boundaries of learning systems are invariably overflown by inside parts flowing out and by outside 'entities' constructing other wholes than the one stipulated by a given learning system.

The boundary of the agent of learning

Most if not all learning theories will at some stage make a reference to the individual human learner. Structural functionalism and social learning theory

do not say that the social system or the community of practice should *replace* the notion of the human subject as learner. What they do say however, is that individual human learning should be conceptualised in *relation* to these systems. So somehow these theories maintain, that there is a *who* of learning. The well-worn category of the human subject might then constitute the boundary needed for a learning system.

The problem of the *who* of learning is subtly addressed by cognitive anthropologist Ed Hutchins in his well-known analysis of distributed cognition (Hutchins, 1996). In this book he tells the tale of an imaginary observation of a community of ants on a beach:

> "Let us assume that we arrive just after a storm, when the beach is tabula rasa for the ants. Generations of ants comb the beach. They leave behind them short-lived chemical trails, and where they go they inadvertently move grains of sand as they pass. Over months, paths to likely food sources develop as they are visited again and again by ants following first the short-lived chemical trails of their fellows and later the longer-lived roads produced by a history of heavy ant traffic. After months of watching, we decide to follow a particular ant on an outing. We may be impressed by how cleverly it visits every high-likelihood food location. This ant seems to work so much more efficiently than did its ancestors of weeks ago. Is this a smart ant? Is it perhaps smarter than its ancestors? No, it is just the same dumb sort of ant, reacting to its environment in the same way its ancestors did. But the environment is not the same. It is a cultural environment. Generations of ants have left their marks on the beach, and now a dumb ant has been made to appear smart through its simple interaction with the residua of the history of its ancestor's actions."

This story effectively troubles the notion of the individual organism as learner. The increase in "smartness" is mutually constituted between the ant-work and the rearrangement of the environment. The learning, and the credit, cannot be attributed to the individual ants, or the group of ants. Learning is relational between ants and beach, past and present.

The point of learning as relational is often repeated in social learning theory. However, drawing on Marx these authors also tend to view the cultural environment as congealed human labour. In this way, everything is in the last instance attributed to human work[6].

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[6] A similar the-human-takes-it-all strategy is employed by Wenger, who makes symbolic interaction the criterion for participation (and thus learning) in a community of practice (Wenger, 1998)

But this attribution is no less valid, than reducing the beach to congealed ant-labour. In the case of the ants, we have no problems thinking in terms of the development of an ecological process. It would also be reasonable to regard the development of the so-called *social* praxis as ecology comprising humans as well as non-humans. This of course means that 'the relatively permanent change of behaviour' that learning theories define as learning, cannot be referred back to a specific who, or to a well-bounded learner.

The boundary of locations of learning

With a troubled notion of the learner, one could perhaps imagine that learning could be pinpointed at specific locations. After all who wouldn't agree that a limited number of square meters on the beach is the location of the Hutchins example?

A somewhat similar turn to location seems to underlie Wenger's book on "communities of practice. Wenger acknowledges that the claim processors in his empirical case have all sorts of material, emotional, and symbolic relations to "others" outside the community of practice. But he insists that all this is negotiated and given meaning in relation to the community at hand. In this way, the symbolic interactions of a community of practice constitute a privileged symbolic location, a *social world*[7] in which the community can be clearly bounded from its surroundings.

Wenger (and other symbolic interactionists) introduce a strong asymmetry between symbolic interactions and everything else. The latter is rendered the object of the former. Symbolic interactionists do not claim that meanings are the only things that matter, but that all human action is intertwined with interpretation and meaning (Blumer, 1969, p.2). I find no reason to doubt that a study of practice on these premises is feasible. As Latour remarks: "Everything may be made to be the measure of everything else" (1988, p.158), and so human meaning-making processes can be set up as the measurement point in studies of the social world. It can be done, and it has been done[8]. But the price paid by this theoretical perspective is that very little space, analytical space, is left for non-humans. In the case of Wenger this means, that the ability to negotiate, relate and accumulate knowledge is only granted to the human actors. The world described by Wenger is thus primarily a social world.

Hutchins' analysis of distributed cognition provides a significant counter-example to the notion of social world. In his study of navigation on a US

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[7] The concept of social world is widely used by symbolic interactionists. See Star & Griesemer (1989) and Strauss (1978).

[8] Numerous examples are presented in Spradley (1979)

Navy ship he analyses the navigation practice from three different perspectives. One story is about the trajectories of the members of the navigation team, the quartermasters. The story is about their different positions in the collective task, the movement toward greater responsibility and complexity, and the continual access to learning resources. This story is very much in line with social learning theory, and it is indeed adopted as a crucial case story in Lave&Wenger (1991).

But Hutchins tells a second story about navigation. This story tracks a sequence of computations from the taking of a bearing through a series of intermediary steps to the final drawing of an additional pencil mark on the sea chart. In the intermediary steps, different human and non-human 'media' are juxtaposed. The computation is generated when one stage in one media is propagated to another state in another media. A few examples will clarify this: In the alidade used by the bearingtaker, two compass scales are superimposed on to the image of what ever is seen in the telescopic sight. So in the alidade, the *image of a particular object* in the surroundings of the ship (e.g. a lighthouse) is propagated to a *particular point on a compass scale*. In the next step, the bearingtaker reads the compass scale and shouts the reading to another quartermaster. In this way a *particular visual reading* is propagated to a *particular verbal announcement*. And on it goes. Information constantly changes form and media all the way to the final pencil mark on the sea chart.

Hutchins argues that a computational cycle of navigation is effected through a series of such propagations of stages across media. The computation or cognition of the navigation team is then a feature of the whole assemblage of people and artefacts rather than simply an ability of the humans involved.

If we relate this story to Wenger's notion of a located (symbolic) community it is clear that Hutchins moves beyond the notion of symbolic interaction as a distinctly human phenomenon. Cognitive performances such as computation and remembering are carried out by people and artefacts alike. The putative boundary of human symbolic interaction is obviously flooded.

But in Hutchins' second story, the *geographical* boundary of the team is still intact. If we grant that cognition might include some local artefacts, then we can still maintain that the team consists of a finite number of parts, and that it is located in a specific place. We can still designate it a cognitive *system*, as Hutchins indeed does.

This however, changes with Hutchins third story about navigation, a story about navigational artefacts (ibid, pp. 49-116). Navigation is about directing the movement of a craft from one point to another. But this can be done with very different sets of tools. Hutchins has done extensive research on

Micronesian navigation, and he uses this tradition as a point of comparison for his analysis of western navigation. One crucial feature of western navigation is technologies for measurement and digital computation. An example of this is the *chip log*, a device used to measure the speed of a ship. The chip log consists of panel of wood (the chip) tied to a line. The chip is thrown over the side of the ship into the water, where it remains stationary while the ship sails away. The line to the chip is allowed to pay out for a given period of time. Initially, this time was the duration of a spoken prayer, later time was measured by a sandglass. Since speed is distance pr. time unit, the amount of line is directly proportional to speed. The amount of line is easily measured by counting the number of knots[9] on the line, each knot indicating a fixed interval of length. The chip log, is thus a tool for measurement that generates digital output (a number of knots).

As might well be imagined, this digital output generates opportunities for further computations, such as predicting the distance travelled during a longer time interval. Another interesting feature of the chip log is that its precision is dependent on the precision of time measurement. So there are important interdependencies between the tools of navigational.

I could go into further details with Hutchins analysis of navigational tools. But there is no need to. The point I wish to emphasise is clearly brought out in Hutchins concluding remarks: "The tools of navigation share with one another a rich *network* of mutual computational and representational dependencies. Each plays a role in the computational environment of the others, providing the raw materials of computation or consuming the products of it. In the *ecology* of tools, based on the flow of computational products, each tool creates the environment for others." (ibid, p.113-4, emphasis added). What I suggest is important here is Hutchins' change of metaphors. In his first stories he talked about learning and cognitive *systems*. In this story he talks about ecologies and networks. The story of artefacts is about functional interdependencies, but it is not a story about a geographically bounded functional organisation. Like the earlier stories, the story of artefacts is about multiple elements, but in this case the number of elements are not finite. So here we have another case of overflow. In Hutchins' second story, the notion of social worlds was flooded with non-human participants, now in this third story, the notion of boundedness in time and space is flooded or replaced by notions of continually developing ecologies or networks.

[9] This is the origin of the term 'knot' as a measure of a ship's speed in nautical miles per hour (ibid, p.105).

The crisis of learning systems

In the previous discussion, I have introduced the most common learning systems outlined by learning theories: the organism, the organism in the social system, and the social group. I have argued that there are problems with all of these systems. The boundaries of these systems are leaking and, to put it colloquially, the parts refuse to be parts and the wholes refuse to be wholes. I have described a number of these overflows. In the case of the *content* of learning it seems that the parts of learning systems continuously appear also to be parts of something else. In addition, the 'whole' of the learning systems appear be partially defined by external elements rather than exclusively by their so-called constitutive parts. Learning theories often use the *agent* of learning as a boundary of a learning system. But, as I have argued, the evolving relations between agents and environments make it hard (or reductionistic) to attribute the change merely to the organism. Finally, it seems untenable to employ a particular (symbolic or geographical) *location* as the boundary of a learning system. The concept of a social world as a place for only-human meaning-making is contradicted and flooded by non-human entities in Hutchins analysis of navigation as distributed cognition. And the idea of learning bounded by a geographical space is contradicted by Hutchins' depiction of an unbounded network of artefacts evolving over time.

So in conclusion, there seems to be a number of intractable problems with learning theories due to their dependence on the notion of system. And it seems about time to search for new guiding metaphors in the study of practice. In the following, I will explore the use of the *network* metaphor in actor-network theory.

Actor-Network Theory

The notion of network is pivotal to *actor-network theory*, a particular sociological tradition, which has gained momentum over the past two decades. A late (in fact the latest) version of this theory will be the centre of attention in following chapters. For that reason, I will presently make a relatively thorough presentation of the early theory. I will of course also clarify, how and why actor-network theory is a viable alternative to theories based on some notion of system.

The primary precursors of actor-network theory are the so-called *laboratory studies*, which were developed in the 1970's by a new generation of scholars in the field of science studies[10]. At that time, natural science had for a long time been regarded as an awe-inspiring institutionalisation of rationality. But

[10] My account of laboratory studies is primarily based on Knorr-Cetina (1994) and Olesen (1996).

the groundbreaking work of Kuhn (1962) had promoted the idea that the rationality of science is in fact constituted in specific historical and practical circumstances. Social science should therefore not consider the facts of natural science to be 'untouchable'. Newcomers to the field of science studies, notably Michael Lynch, Bruno Latour[11], and Karin Knorr-Cetina, set out to investigate the day-to-day practicalities of scientific knowledge production. They conducted anthropological-style fieldwork in prestigious research laboratories, and through this, they were able to offer detailed accounts of the construction of scientific facts. They described how scientific knowledge is accomplished through messy interactional work, and how practically everything is negotiated in this process: What is an object and what is an artefact of the experiment? Who is a good scientist? What is a proper method? What counts a replication[12]? They found it surprisingly easy to show that successful scientific practice depends on numerous mundane and nonmethodological elements, which were completely absent from the philosophers' accounts of science (Knorr-Cetina, p.144). Latour & Woolgars text (discussed in chapter 2) is case in point. They describe the scientific work in a neuroendocrinological laboratory as a series of translations and negotiations involving people, papers, rats, computers, chemicals, inscription devices, articles and numerous other elements. But laboratory studies didn't just add new practical elements to the picture of science; they also changed the picture by their whole-hearted commitment to *constructionism*. The claim that forcefully emerged from laboratory studies was that scientific facts are neither given, nor discovered. 'Facts' are outcomes of negotiation processes comprising all the before mentioned elements. Thus the fact of a particle or a chemical substance is not residing in some pre-formed unit 'out there'. The fact is a product of interactional work and the generation of a network of relations between matter, inscription devices, people, articles etc. Only when matter, machines, people, etc. have been ordered, persuaded, manipulated, disciplined to play their roles in the network of a new fact, will the fact emerge as a self-evident and incontrovertible. It is easy to misunderstand constructionism on this point. The claim is *not*, that objects, such as electrons did not exist before science lay its hands on them. The point is that objects are constructed when they are identified, investigated, differentiated from other objects, given a name etc. Through this, objects become real in the sense, that they can reckoned with, inserted into and encountered in previously constructed networks (Knorr-Cetina, p.161). The crucial move made by

[11] The text by Latour & Woolgar (1979) discussed in chapter 2 is considered one of the classics of laboratory studies.
[12] This question has been explored by the so-called SSK tradition (Sociology of Scientific Knowledge), see Collins (1985).

laboratory studies was thus to abandon abstract *philosophical* questions about the existence of reality and turn to *empirical*, *sociological* questions of how, in local practice, things are constructed as real.

The constructionist studies of science and technology were continued during the eighties but also taken in new directions[13]. One of these was the *actor-network theory* (ANT) developed by Bruno Latour, Michel Callon and John Law[14]. These authors combined constructionist studies with ideas derived from Saussurean semiotics. The fundamental claim taken from semiotics is that all entities are relational; the form and attributes of an entity are established in relation to other entities. Semiotics has used this notion to study linguistic units in their relations to other units in the language. ANT however extended the notion of relationality considerably by including any imaginable kind of objects: people, machines, materials, scientific facts, animals, institutions, society. In this way, ANT attempted to develop a semiology of objects, rather than merely a semiology of meanings.

The notion of *actor-network* encapsulates ANT's ontological position. The claim is that the world is *not* populated with entities that possess certain essences in and of themselves. The world is a texture of relations - a network - which occasionally produces the effect of stabilised entities. The *actors* in the actor-network are not (necessarily) human agents, but actors in the semiotic sense: an actor is anything that is ascribed agency or admitted to be the source of agency in a situation. So any kind of 'entity' (machines, materials, persons, institutions, animals, particles, etc.) can figure as an actant in ANT's analyses. With this highly abstract and perhaps strange sounding vocabulary, ANT set out to investigate how actors become connected and disconnected, shaped and deformed, assembled and dissolved through the development of actor-networks. The sociology of translation is another name, by which this 'program' is known.

In the following I will use a study by Michel Callon (1986b) to exemplify this program of investigation. Callon's case will serve to illustrate the analytical opportunities that follows from thinking in terms of a networks and (semiotic) actors, and how this is different from thinking in terms of systems.

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[13] Among these the so-called Sociology of Scientific Knowledge (SSK), which was concerned with the importance of human and social factors in the construction of scientific knowledge (e.g. Collins 1985).

[14] Some of the important works within the ANT tradition are: Callon & Latour (1981), Callon & Law (1982), Callon (1986a;1986b), Latour (1987).

Callon's study is about scallops in St. Brieuc bay in northern France. Scallops have been highly appreciated by French consumers, but unfortunately the stock of scallops has decreased year after year due to predator fish and exploitative fishing. Fishermen and marine biologists alike have begun to worry about the dwindling stocks. In 1972, when Callon's story takes its beginning, scallops could only be fished at two locations in France: at the coast of Normandy and in St. Brieuc bay.

In 1972, a conference was held to discuss ways to increase the stock of scallops in St. Brieuc bay. At this conference, three marine biologists told of their observations on a recent trip to Japan, where a different species of scallops is *cultivated*. The technique is as follows: In the larvae-stage the scallops attach themselves to so-called collectors, that float in the ocean. The collectors are surrounded by a net protecting the larvae against starfish and other predators. When the scallops have reached a suitable size, they are 'sown' on the ocean floor and after another 2-3 years the full-grown scallops can be 'harvested'.

At the time of the conference, there were no direct relations between the marine biologists, the fishermen in St. Brieuc, and the scallops. Furthermore, neither biologists nor fishermen had any knowledge about the mechanisms behind the development of scallops. *Two years later* scientific knowledge about the development of scallops had been produced, a social group had been established (the fishermen in St. Brieuc bay), and specialist groups had been organised around the development of the cultivation method.

Callon analyses this course of events by following the three marine biologists, who brought home the Japanese idea of cultivation. He identifies four crucial moments in the biologists' attempt to establish a project around the method of cultivation. At each of these moments, certain actors are identified and their possible interactions are limited.

First moment: identities and an obligatory passage point.

After the conference, the three marine biologists wrote a proposal that outlined a particular project as well as the identity of a number of actors. According to the proposal, the *fishermen* want to fish as many scallops as quickly as possible in order to make profits, but they are also concerned about their long term interests, and therefore they will be interested in a project of restocking the Bay. The *scientific colleagues* of the three marine biologists are considered to be interested in the advancing of knowledge, and therefore they would be interested in a project, in which scallops are studied in the sea rather than in experimental tanks. Finally, the biologists assume that *scallops* anchor

themselves during their larvae stage, and for this reason they "will 'accept' a shelter that will enable them to proliferate and survive" (ibid. p.205). After listing the actors and their interests, the proposal link them in a particular way. All three actors (in italics above) are related to the project of the three biologists, and to the key question, which they pose for this project: Do the French species of scallops attach themselves in the larvae stage? This question is set up as an *obligatory passage point*, something that all the actors will want to relate to in order to achieve their goals (fishing in the long term, proliferation, and knowledge). But the passage point as well as the identities of the actors are only what Callon calls a *problematisation*; a conjecture made by the three biologists. A conjecture, which may later be confirmed, challenged or transformed.

An important feature of Callon's analysis is that the analytical vocabulary of identity and interest is used in a way that makes no a priori distinctions between natural and social actors. Scallops, colleagues and fishermen *act* in certain ways, and they might be made *interested* in the project for certain reasons.

Second moment: locking allies into place by means of devices of 'interessement'.

After the initial proposal, the three biologists begin to lock their allies into place. Again Callon invents an analytical term, which is impartial to the actors involved. Callon takes the list of interests (outlined above) to be one point in a broader process of *interessement*. Interessement is the process in which other actors define the inclination of an actor. When an actor, A, tries to establish a link to an actor B, then A must simultaneously cut or weaken the ties between B and any other actors that define B differently. So interessement from the perspective of A includes any process or device that can be used to *come between* B and any other actor that defines B.

Callon first applies the concept of interessement to the scallops. The biologists produce a towline with a number of collectors protected by nets. Callon calls this an archetypal interessement device. Before, larvae were eaten by fish, or taken away by currents. But the device introduced by the biologists, *come between* the larvae and other actors such as fish and currents. Through this, scallops are interessed in a new way; a way that leads them toward the obligatory passage point set up by the biologists.

The biologists also work to redefine the inclinations of representatives of the fishermen by introducing devices such as curves showing the decline of scallops, and stories about the 'spectacular success' of the Japanese method. And the scientific colleagues were interessed by means of an exhaustive

literature review concluding that nothing is know about the French species of scallops.

Third moment: Enrolment - defining and co-ordinating roles.
In the next part of the story, Callon describes a long series of negotiations that transform the initial interessement to actual participation or *enrolment*. Enrolment is another term, which is sufficiently impartial and broad to accommodate any kind of actor. With this term, Callon denotes a multitude of devices by which actors are made to play their roles. *Physical violence* is asserted to sever the link between predator fish and the scallops. Various materials on the collectors are used to *seduce* the scallops to attach themselves. The professional colleagues are *persuaded* by the three biologists' talk, but their enrolment is also secured through the explicit *recognition* of their colleagues' earlier work on the scallops' capacity to anchor. Finally, the fishermen simply appear to consent to their role as amused spectators, without any particular effort on behalf of the biologists.

Fourth moment: mobilisation of allies - and dissent
At this stage, the biologists have only interessed and enrolled a few individuals: some representatives of the fishermen, some colleagues at a conference, and a limited number of larvae on a collector. The next big question is whether the *masses*, that is the fishermen, the scientific community, and all the scallops in the bay, will follow their representatives. Using another war metaphor Callon calls this process *mobilisation*. This process is about securing the link between spokesmen and the entities on whose behalf they speak.

To begin with the scallops: The biologists take the larvae anchored to the collectors to indicate that all larvae go through a stage of anchorage. Epistemologists call this induction, but Callon likens it to an election. A few individuals (scallops) come forward to vote (anchor). The biologists count the votes, and transform them into a curve on a piece of paper. Later the paper is transported to a conference (the second conference in this story), and presented to the scientific colleagues.

In the case of the fishermen, the process is similar. From this community a few individuals emerge to vote for a representative. The votes are tallied, and someone is elected to speak in the name of the community. The representative negotiates with the three biologists, and the result of this conversation is also carried to the conference. So at the conference the biologists can tell their colleagues what the scallops will do, and what the fishermen want. These silent masses have been given a voice, and the three biologists have managed to become the head of several populations.

However, this constellation of actors and spokespersons is not guaranteed. It can be challenged at any moment. And this is in fact how Callon's story ends. "In the two years following the first [..] anchorages, the scallops hatched from the larvae 'interested' by the collectors, after being regrouped at the bottom of the bay in an area protected by a concrete belt, are shamelessly fished, one Christmas Eve, by a horde of fishermen who could no longer resist the temptation of a miraculous catch. Brutally, and without a word, they disavowed their spokesmen and their long term plans." (ibid, p.220).

With this account of Callon's analysis, I am now in a position make a number of points about ANT.

First, I wish to repeat the important point, that ANT makes *no a priori distinctions between actors*. This means that no assumptions are made about the difference between social and natural actors beforehand. Consequently, ANT avoids a number of the initial moves made by learning theories; ANT does not take a predefined organism as the unit of analysis; ANT does not stipulate that social actors are the only actors in the so-called social order; ANT does not define action as entirely social, and neither does it exclude the possibility that non-social entities participate in the action. All of the moves sketched here grant humans a particular and privileged status in the analysis a priori, and ANT vehemently rejects this.

Second, the analysis by Callon illustrates that it is entirely possible to make a comprehensive analysis without recourse to the systems (of learning) employed by so many other theories. ANT does this by developing *neutral and abstract vocabularies*, which can accommodate a broad spectrum of actors. This does not imply that ANT believes itself to be neutral. Quite contrarily, ANT considers itself to be building networks, which are no different from the ones it studies[15]. But ANT does claim that it is able to analyse natural and social actors without privileging one or the other.

Third, it is important to emphasise exactly what is negotiated in Callon's case study. The outcomes of the negotiations are facts about nature (scallops do anchor in the larvae stage) and facts about society (the fishermen at St. Brieuc Bay is a group that want to restock the bay). The point here is that *nature as well as society is an outcome of the negotiation*. If problematisation, interessement, enrolment, and mobilisation had for some reason been done differently, then different facts of nature and society would have been constructed. The possibilities are endless: A different material on the collector might have interessed the larvae more efficiently. A different spokesman for the fishermen might have made demands, or caused the fishermen to split up

[15] Cf. chapter 2.

into two factions. The entity of 'the three marine biologists' might have split up, over some issue. So the outcomes, natural and social, is the empirical concern of ANT. And it is precisely, because these outcomes are uncertain, that learning theories misconstrue their object when they assume that certain social units or actors can be defined beforehand, or that certain non-social actors can safely be disregarded!

Fourth, the metaphor of the network *challenges familiar notions of location*. ANT focuses on the tangible, functional relations between entities; Scallops anchor to a collector. Biologists count the number of anchored scallops. The count is transformed to a curve on a piece of paper. The paper is transported to a conference in another city, and presented to the colleagues. In this mode of analysis the geographical proximity between entities is granted no explanatory role in itself. A fish swimming close by the collector or a car driving right behind the biologists in their way to the conference would be left out of the analysis. The only things that matter are the functional relations between entities. In the words of Latour, the network metaphor breaks the "tyranny of distance" and it "claims that modern societies cannot be described without recognising them as having a fibrous, thread-like, wiry, stringy, ropy, capillary character that is never captured by the notions of levels, layers, territories, spheres, categories, structure, systems" (Latour, 1996a, p 49-50)[16]. The point here is cognate to my earlier comments on Hutchins. The functional relations between navigational tools cannot be described as long as the notion of system is maintained. Therefore Hutchins is pressed to change his guiding metaphor from cognitive system to a network of artefacts.

Fifth, the metaphor of the network *challenges traditional ideas about 'micro' and 'macro' actors*. Social science has endlessly reproduced a certain ontological scale: individual, family, group, institution, and nation state. Parsons' grand systems theory is case in point. Ontological scales generally come with a notion of social order. The larger units determine the smaller units, or in some theories, the other way around (Latour, 1996a). The network metaphor replaces the idea that certain ontological levels are given in the order of things, and that some of these putative levels should be granted explanatory priority a priori. In Callon's analysis, the same vocabulary of actors and relations is used to describe a loosely connected network (the phase of interessement) and an intensely connected one (the phase of mobilisation). The three biologists are followed from an initial situation, in which they are just another actor, to a situation in which links have been forged that allow them to speak as powerful macro-actors on behalf of numerous others. And

[16] Latour (1990) argues that geographical space should be seen as a specific case of net-work.

finally, Callon follows the biologists to a situation in which they start to loose their status and power, due to the actions of the fishermen. Thus, ANT offers a vocabulary for describing macro-actors and macro-effects as constructions rather than givens[17].

Criticisms of Actor-Network Theory - Multiplicity and Performance

ANT has evoked a broad scope of commentaries and criticisms. Some authors have flatly rejected the possibility of treating humans and non-humans symmetrically (Collins & Yearley). I take this to be largely a matter of ontological standpoint, and will not explore this particular debate further. Instead I will turn to a number of sympathetic albeit hard criticisms of ANT.

Susan Leigh Star (1991), a feminist and a symbolic interactionist, recognises that ANT has made an important contribution to the study of sociotechnical networks, by attending to the heterogeneity of their elements. But she also raises concern that ANT seems to view the network from the standpoint of the manager, the innovator or the victor. Callon following the three biologists, not a particular fisherman, nor a particular scallop is case in point. Star is thus accusing ANT of managerialism. She suggests that additional stories and perspective should be voiced. The study of formalisms could be an important methodological handle in this respect (see Star & Bowker, 1999); Networks stabilise themselves by constructing certain standards (obligatory passage points) which actors fit into with greater or lesser ease. The actors, who do not fit easily, must do a lot of work - silent work - in order to fit in. This ubiquitous silent work is epitomised in Stars account of her visit to McDonalds. Star is allergic to onions, but onions are a standard part of all the menus, a part that cannot be omitted, unless you are willing to wait for more than half an hour. So Star accepts the standard menu, takes a plastic fork, and scrapes off the onions herself. This is exactly the kind of silent work that is important to keep the network stable and the standards functioning. But it is also a kind of work that is almost impossible to notice from a managerial perspective.

Singleton & Michael (1993) make a similar call for attention to the multiplicity of networks. Singleton has studied the British cervical screening program. This program might be depicted managerialistically with traditional ANT terms. In that case, the individual General Practitioner would be seen in the role as small pawn in the big game of the health planners. However, Singletons fieldwork reveals that the participation of the GPs is fraught with

[17] For a more detailed discussion of the micro-macro problem see Callon & Latour (1981).

ambivalence. On the one hand, they persuade women to undertake the smear test, but on the other hand they know that the level of cancer in the cervix has not declined during the 35 years, the program has been in existence. On the one hand they tell the women that the test is simple and free of pain, on the other hand, they know that the test in certain conditions is both complicated and painful. And the list goes on.

A 'classical' ANT-perspective would regard these ambivalences as serious problems that might potentially undermine the network. But Singleton & Michael argue that the opposite is the case. It is precisely because the GPs are able to move between so many different and conflicting positions that the program can move on. The coherence and stability of the program, which appears from the managerial perspective of the health planners, is dependent on the growth of supportive networks out of their sight. An important one of these is the clinical practice and the relations to patients built by the GPs. So contrary to the 'classical' actor-network theory, Singleton & Michael claim that ambivalence is, or at least can be, functional.

Commenting on the criticism above, John Law (1997) has suggested that the primary difference between classical ANT and later ANT-related work has to do with coherence and centredness. In Callon's study the three biologists become manager-like by drawing things together; they establish links to numerous allies, and translate them into the single point of a paper, which can be presented to their colleagues at a conference. Clearly, Callon assumes that a coherent, centred reality is (temporarily) made by the biologists, and that this coherent construction is described by himself.

In the study by Singleton things are not drawn together. There is no centre, from which everything is organised. And neither is there a higher court, which reduces the ambivalent positions of the GPs to a singular mode of functioning. The project lives, and lives well, with its incoherences and its decentredness.

Law argues, that if the idea of centredness and coherence is removed or moderated, then a different world-view will emerge. It is still a world of heterogeneous networks and actants, but it is also a world where different entities are linking and clashing in multiple locations. A texture, a patchwork. In this world, ontologies are ambivalent, temporary and only partially coherent. And there is endless work to patch things together. Law and other 'post-ANT' authors have used the term *performance* to characterise the patterns of local, heterogeneous ordering. In the next chapter, I will explore this recent turn to performance in science and technology studies.

Chapter Four

The Performative Turn in Science and Technology Studies

Jean Lave, a key proponent of social learning theory, once remarked, that the field of STS doesn't say *anything* about learning. "Nothing. Zilch"[1]. Obviously, she meant this as a critique.

But given the problems with learning systems, the lack of references to learning in STS might be considered a *virtue*. The field of STS might indeed provide resources for studying practice, without getting entangled with various versions of systems thinking.

In this chapter I will explore a series of partially linked theoretical deliberations and studies of practice in STS. I have chosen to focus on four works by John Law and Annemarie Mol. All of these are part of what has been called the performative turn in science and technology studies[2].

Much traditional sociology imagines the world populated with particular objects that exist in and of themselves; A manager, an aircraft, a disease do of course have a history of development or construction, and they might turn into something else in the future. But in the time slot called the present, objects are entities, gestalts, configurations with particular essential qualities.

The performative turn reverses these ontological premises in a move that bears resemblance of an earlier revolution in social science. In the 1960's pragmatists reversed the Parsonian idea of the social order by making it the object of their analysis, rather than it's premise[3]. In a similar vein, the performative turn studies *the object order* as a precarious accomplishment, rather than a given. Thus to the performative turn, an object is not a singular entity, but rather a texture of partially coherent and partially co-ordinated performances. What an object is, is thus decentred in a multitude of practices. Objects do not exist in and off themselves but only through multiple situated practices. This ontological claim is directly opposed to Kantian notions of

[1] Personal communication, March 2000.
[2] A number of other authors have done related work on performance. Some of these are Donna Haraway, Marilyn Strathern, Bruno Latour, Michel Callon, Vololona Rabeharisoa, Vicky Singleton, Tiago Moriera, Anni Dugdale, Ingunn Moser, Hans Harber and Alice Stollmeyer.
[3] See e.g. Suchman (1987)

‘das Ding an sich’ versus ‘das Ding für Uns’. In the Kantian version the relations that make up an object ‘out there’ are somehow closed in on themselves and completely separable from the relations that ‘we’ may forge with them. The performative turn implies that the putative object ‘out there’ is never closed in on itself. It is always constituted and re-constituted, that is *performed*, in relations to multiple others. These others may be a contemplative ‘Uns’, a more directly interfering ‘Uns’, or any other sort of material, textual or symbolic relations. So the claim is, that an object does not exist behind fixed boundaries that separate its internal essence from the rest of the world. An object is a relational entity.

A recent and very clear example of this mode of analysis is Annemarie Mol’s study of anaemia (Mol, 1999). She outlines three different performances of anaemia: a clinical, a statistical and a pathophysiological.

In the clinic the patient may complain about tiredness, and the doctor will examine his eyelids to see if they look pale. If this is the case, the client might be said to have anaemia. In this clinical performance of anaemia, the most important ’props’ are the visible and verbally accountable symptoms.

In a hospital laboratory anaemia is performed through an analysis of the haemoglobin-level in a blood sample. If the level is more than two standard deviations below the average in a norm group, then the patient is said to have anaemia.

In a pathophysiological context (e.g. surgery) an assessment is made of the haemoglobin level necessary to transport sufficient amounts of oxygen to the organs or the patient. If the haemoglobin level drops below the set level, the patient is said to have anaemia.

Mol now makes the interesting observation that the three performances of anaemia are not always concordant. A number of patients deviate from the statistical norm, but show no sign of tiredness. There are also cases in which the haemoglobin level drops to such an extent that sufficient oxygen is not transported to the organs, but the patient is nevertheless above the statistical cut-off point. So the idea that anaemia is a single thing, or that a single thing is underlying all the ”instances” of anaemia will have to go.

So the object of anaemia is somehow *more than one*. But Mol also argues, that it is *less than many*. The different performances of anaemia are connected, or better: partially connected.

One example of this is that the clinical performance is *included* in the statistical performance. The statistical performance is based on norm groups

that are constructed from a large number of blood samples from healthy individuals. But the evaluation of 'healthy' is not statistical. It is clinical.

In other cases, the different performances co-exist *in sequence*. Such is the case, when a clinical evaluation is followed by a laboratory test. In yet other cases, one performance *substitutes* another; in a third world aid programme fast and inexpensive clinical assessments will replace slow and expensive laboratory tests.

With this analysis, Mol argues that the object of anaemia is *multiple* rather than singular in character. It is more than one because it is performed in different ways, but is less than many because the performances are connected is a variety of intricate ways. Moreover the claim is that there is no-thing behind or underlying the performances. Anaemia *is* the various performances.

As Mol's analysis indicates, the performative turn thrives on at least two empirical questions: How are objects multiple? And how, or to what extent do objects cohere in spite of their multiplicity?

In what follows, I will review four exemplar studies within or rather co-constitutive of the performative turn in STS. In each of these I will try to explicate what kinds of multiplicities and what kinds of coherences are suggested.

Organizing Modernity

Organizing Modernity (Law 1994) is a complex book that works on at least three interconnected projects. First it outlines some of the theoretical space that the performative turn might be said to inhabit. Second it presents an ethnographic study of Thatcher-era management and organisation in a British research laboratory. Third the book develops a novel theoretical concept, *modes of ordering*, which is a particular way of talking about performances.

The theoretical outline of a modest sociology

The problem of 'the social order' is no doubt the oldest and the most common way for sociology to define it's key concern. Law opens the book by refuting this problem term by term. First he argues that there is no 'order'. Order is never complete, it is always temporary and precarious. It can always be overthrown. Moreover, he argues[4] that the modernist dream of a perfect order should really be seen as a nightmare. The worst crimes in history have been committed in attempts to impose a perfect order by systematically weeding

[4] Following Zygmunt Bauman

out ‘the impure’ or ‘the other’. In this argument, Law draws on Foucault, Weber, Marx, Elias, Bauman and others who have described modernity as a period in which the methods of order have been thoroughly reorganised and intensified.

Second, when ‘order’ is never attained, then it follows that the singular ‘the’ must go as well. ‘The’ social order is replaced by a plurality of orderings.

Third the idea of ordering as *social* is challenged by Law. He argues that “what we call the ‘social’ is *materially heterogeneous*: talk, bodies, texts, machines, architectures, all of these and many more are implicated in and perform the ‘social’” (Law, p.2). Consequently, the object of study becomes processes of socio-technical ordering.

With this ontological commitment to heterogeneous orderings, the next question is how to study these beasts. Law calls for sociological *modesty*. We ourselves are participating in projects of ordering, through our talk, writing, etc. We too are part of the modern project, and we too want to create order. There is no escape from that, so the best we can do is to try not to create violence in our own ordering, and not to pretend that our ordering is perfect or to conceal the blindnesses that went into producing it.

To do this – or not to do this – Law enlists a number of modest sociologies: the sociology of scientific knowledge, actor-network theory, symbolic interactionism and post-structuralism. All of these concern themselves with social processes, and all of these have avoided the idea of one all-encompassing social order. From these theoretical traditions Law draws four principles.

1. Symmetry

David Bloor (1976) originally formulated the principle of symmetry. The principle states that both ‘true’ and ‘false’ knowledge deserve a sociological explanation and that the explanation of both should be in the same terms. Thus the principle outlaws the standard practice of the earlier Mertonian sociology of scientific knowledge, in which true scientific knowledge was explained by referring to nature, while false scientific knowledge was explained by referring to social factors (e.g. incompetence or fraud).

Actor-network-theorists have extended the principle of symmetry to the relation between humans and non-humans (e.g. Callon 1986b). In these analyses humans as well as non-humans enter the analyses in the form of ‘actants’ which are associated in networks. In these networks “essential qualities” such as agency are generated through the association and

disassociation of actants. What is subjective and what is objective is thus a network effect, rather than a quality given in the order of things.

Furthermore, actor-network-theory has extended the symmetry principle to the so-called micro-macro divide (Callon & Latour 1981). This putative difference between micro and macro phenomena is also seen as a network effect. At certain times, networks are transformed in ways that render certain actors 'macro-like' by allowing them to speak on behalf of a number of other actors. The appearance of micro and macro or bigger and smaller should thus be analysed as an outcome of net-work rather than pre-established levels of reality.

All of these versions of symmetry are important because they stress that analysis should not start by privileging certain classes of phenomena, or by saying that certain things do not need to be explained.

2. Non-reduction

Reductionism is the idea that a small class of phenomena drives everything else. This mode of thought is of course standard practice of the vast majority of social science. Law argues that reductionism divides the world into two kinds: the drivers and the driven. In that way, the analysis starts off on an asymmetrical footing. It tends to build orders, and it tends to exclude and deny all the things that don't fit into the grand explanatory schemes.

Structuralism is one of the few alternatives to reductionism. In this mode of thought, anything is seen as the product of multiple relations to others. But, unfortunately structuralism also makes it very hard to think about processes. According to Law, structuralism tends to paint synchronistic images, which are somehow out of time.

As an alternative, Law suggests the following path for a modest sociology:

> "It will not distinguish before it starts, between those that drive and those that are driven. But, and this is where it is relational, but not structuralist, it will allow that effects, a relative distinction between drivers and the driven, may *emerge* and be sustained. Note that this is a conditional and uncertain process, not something that necessarily happens, not something that is achieved for ever" (ibid, p.13).

3. Recursive process

The third component in Law's modest sociology is the idea of the social as a recursive process. When the idea of an order is left behind, the focus moves to orderings. One way to put this is that the social is conceptualised as a verb rather than as a noun. As a good example of this, Law refers to symbolic

interactionism (e.g. Blumer 1969). In this tradition social relations and the self are regarded as continual outcomes of interaction. So an entity like the self is regarded as a process, something that is done, not as something that simply is.

But even if sociology attends to processes, one cannot help asking what *drives* these processes? Law is quite clear on this point. There is nothing outside or behind, that drives the process. Social processes are *recursive*, that is, self-generating. Quoting Giddens (1984), Law states, that the social is a medium as well as an outcome. "So the image that we have to discard is that of a social oil refinery. Society is *not* a lot of social products moving round in structural pipes and containers that were put in place beforehand. Instead, the social world is this remarkable emergent phenomenon: in its processes it shapes its own flows. Movement and the organisation of movement are not different." (Ibid, p.15)

In short, this means that modest sociology can tell stories about generative relationships and patterns that seem to reproduce themselves. But not about causes and not about structures. In this way, modest sociology consciously gives up most of sociology's explanatory resources. According to Law, this radical move is necessary "if we are to avoid reproducing the games of classical modernism, and put the experience of hideous purity behind us" (ibid. p.16)[5].

4. Reflexivity

Law suggests that reflexivity is about acting upon yourself, as you would unto others. This means that we also have to see ourselves and our own accounts as local and recursive effects. There is no room for pretending that *our* vision is pure or that *our* orderings are irreversible. So on one hand we are caught up in the modern project of wanting to make pools of order, and on the other hand this project is as impossible for us as it is for everyone else.

But if monitoring, legislation and control are impossible, then the question remains. What should we do as social scientists? Should we cleave to the modern project, and keep making 'legislation' albeit of a more provisional and modest kind? Or should we turn ourselves into interpreters, who aim to systematically deconstruct our own positions?

[5] A similar argument in a different context is made by Enzensberger (1999) in his essay "Tilbagetogets helte" [The heroes of retreat]. Enzensberger calls for a new vision of political heroism and leadership. The art of the possible should not be about triumphs and conquering, but about leaving untenable positions. The true political hero is he who leads his people back from the front where they face destruction. In a similar vein Law argues that we should withdraw from the untenable positions of modernity before we cause more damage.

On this hard question, Law says that he "provisionally, very provisionally, [..] tend[s] toward the camp of the modest legislators rather than the interpreters" (ibid. p.17). So Law *will* attempt to do sociology: to lay down principles, and to say how things are.

Modes of ordering

The empirical basis of *Organizing Modernity* is an extended ethnographic study of Daresbury SERC laboratory, a British research institution. From this material, Law develops a 'thick' empirical description of four so-called *modes of ordering*. A mode of ordering can briefly be defined as way in which agents and materials constitute themselves and social organisation. Or to quote Law's formulation: "I think of them as fairly regular patterns that may be usefully imputed for certain purposes to the recursive networks of the social". In what follows, I will briefly present the four modes of ordering, discussed in the book:

Enterprise gives rise to the kind of agents sometimes referred to as the cowboys of the organisation. It is a way of doing things that puts a premium on qualities such as about opportunism, pragmatism and achievement. The ideal agent is an entrepreneur who is sensitive to the shifting opportunities and demands. And this might well include bending or breaking the rules set up by bureaucrats. Enterprise is about seizing the day and making the most of it. This mode of ordering performs structure and agency in a particular way: Structure or bits of structure are regarded as resources that the agent must use. A passive agent is an irresponsible agent. Flowing with the stream or following the given structures is not acceptable.

Administration is the bureaucratic mode of ordering. This is about routinisation, formalisation and the making of consistency. It is about defining roles, procedures, rules and hierarchies. The ideal agent is systematic, planning and meticulous. The aim is the creation of the perfectly well-regulated organisation. Responsibility is about being dutiful and following rules. This however, does not necessarily preclude creativity or proactivity. It can take considerable amounts of both to extend rules and consistency to novel situations. But, at any rate the 'dragons' that are slain by Administration are comparatively smaller and less visible, than the dragons in the stories of Enterprise.

Vision. The keywords in this mode of ordering are charisma, grace and transcendence. The ideal visionary agent tries to separate himself from the profane. Vision is about privileged access to ultimate truths. "Power is drawn *from the other side*, a sacred place that is sacred *because* it is set apart" (ibid. p.79). So agency is generated through the juxtaposing of existing structure

with a yet to be realised structure. In some versions, visionary agents are believed to be born that way. Others talk of guidance and rites of passage (e.g. Traweek 1988). And yet others[6] have pointed out that we all have visions, but that very few of us are able to harness the resources of organisations to follow through on them.

Vocation. This mode of ordering is about embodied skills and expertise. It talks about practical experience, tacit knowledge and apprenticeship-like forms of learning. One example of this is Kuhn's (1962) puzzle-solving scientist within a normal paradigm. He is creative and self-starting, but simultaneously adhering to conservative standards of good science, which he has assimilated by working alongside older experts. Thus, vocation is about the disciplined body, domains of skill, and professional demarcations. It is about belonging to a community of practitioners and about the social basis of skills[7].

Performance

To sum up, *Organizing Modernity* outlines some theoretical space for a performative turn. Performances are viewed as recursive heterogeneous processes that create certain effects. These effects do not amount to orders, but may be studied as precarious outcomes of ordering. No causes or final instances are to be found outside the heterogeneous social processes.

The modes of ordering is one particular attempt and one specific theoretical tool for imputing patterns to the social. I will say more about this tool at the end of this chapter, when I have reviewed a number of other tools.

Regions, Networks, Fluids and Fire

In the article *Regions, Networks and Fluids* Mol & Law explore one more way of imputing patterns to the social. Their topic is *topologies* of the social.

In the original sense of the word, topology is a branch of pure mathematics that deals with spatial types. It articulates spaces that go beyond the traditional X, Y and Z axes. It explores the nature of objects and the possible mathematical operations in these alternative spaces.

Mol & Law seize the notion of 'topology' and apply it to social science. Their argument is this:

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[6] Law refers to Susan Leigh Star

[7] Lave & Wenger's theory of social learning in communities of practice is another obvious example of "vocation" (Lave & Wenger 1991).

> ” ’The social’ doesn’t exist as a single spatial type. Rather it performs several *kinds of space* in which different ’operations’ take place” (ibid. p.643).

In this quotation, it should be noted that Mol & Law do not say that the social exists *in* different kinds of space. Rather they say that the social *performs* spaces. So the topologies are not somehow outside the social. The oil refinery image that Law discarded in Organizing Modernity is not re-introduced.

Moreover, we might note that the quotation rehearses the leitmotif of order*ings*. The social performs a plurality of spaces rather than just one.

In the following I will present three different kinds of space discussed by Mol & Law. They do this through an empirical investigation of anaemia in the Netherlands and in Africa. What is anaemia? Where is anaemia? And what kinds of space does it perform?

Regions

A standard textbook defines anaemia as the absence of “..enough RBC Hb (red blood cell haemoglobin) in the blood. Normally there is more than 10g haemoglobin in each decilitre of blood” (ibid. p.644).

Epidemiologists have studied the geographical distribution of this condition. In the Netherlands studies suggest that between 1.4 and 2.0% of the population is anaemic. Whatever the precise figure, all the studies indicate that the prevalence of anaemia in the Netherlands is low. On the contrary, anaemia is considered one of the commonest causes of ill health in Africa. In this case, studies suggest percentages of anaemia ranging from 9.4 to 50% of the population (ibid. p. 644-6).

Mol & Law observes that the facts being created by epidemiologists are *regional* facts. They are creating a regional topology. Regions are generated when a boundary is drawn around something, and when the differences inside are suppressed. The Dutch figures are low - give and take some variation. And the African figures are high - give and take some variation. “So it’s possible to build a version of the social in which space is exclusive. Neat divisions, no overlap. Here or there, each place is located on one side of a boundary. It is thus that an ‘inside’ and an ‘outside’ are created. What is similar is close. What is different, is elsewhere” (ibid. p.647).

Networks

So a space of regions is one possibility, but there are others. Mol & Law note that regional maps depend on numbers, which depend on measurements. And

these in turn depend on machines that function and on properly trained people. So the creation of a regional map requires a *network* of haemoglobin measurement.

Actor-network theory[8] has made this point repeatedly: The regional spaces that can be drawn depend on a different kind of space, the space of *networks*. Mol & Law defines a network as "a series of elements with well defined relations between them"[9]. The elements can be anything: A needle, a machine, a normal distribution, a skilled nurse taking a blood sample. And the relations can also be of any imaginable sort. The defining characteristic of a network is simply that it hangs together in some functional way. This means that 'proximity' in a network is not related to physical distance. Instead, proximity has to do with location in the network of relations. "Places with *a similar set of elements and similar relations between them* are close to one another, and those with different elements or relations are far apart" (ibid. p. 649). So clinics on different continents, that use similar machines, materials, and work procedures are far apart in regional space but quite close in network space.

Fluids

The rather heroic stories about world spanning and world generating networks are often followed by stories about disastrous network failures[10]. Machines break down, calibrations go wrong, materials run out, samples get lost, or people don't follow procedures.

Mol & Law argue that there are two ways to study these failures. One approach is "stay with the network" and study how it struggles to maintain its coherence vis-à-vis other networks[11]. The second approach - which they themselves choose to explore - is to look for other spaces beyond the network. So Mol & Law want to look for (spatial) conditions of possibility for network space, just as actor-network theory in the 1980's looked for (spatial) conditions of possibility for regional space.

Mol & Law continue their story by attending to clinical diagnoses. Clinical diagnoses are based on symptoms and signs, so this work moves on regardless of the failing network of haemoglobin measurement. Clinical methods might

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[8] See Latour (1990).

[9] Some actor-network theorists e.g. Bruno Latour talk about less as well as more stabilised sets of relations under the rubric of network. His definition of network would thus be broader than the one used by Mol & Law. See Latour (1996b).

[10] E.g. Callon (1986a, 1986b), Latour (1987). Both describe large scale and rather sudden project failures.

[11] Singleton & Michael (1993) is an example of this approach. Mol & Law is sympathetic to this analysis.

be considered yet (or just) another network. Perhaps one composed of skilled human bodies, gestures and signs. But interestingly the elements of clinical diagnosis are *not* invariant. In the Netherlands complaints of dizziness, tiredness and shortness of breath are taken to be indicative of anaemia. But in Africa these symptoms are so usual in daily life, that patients are unlikely to report them. In Africa an observation of pale eyelids is more likely to enter the clinical method. Whereas this element is not used in the Netherlands because pale eyelids only occur in severe cases of anaemia. And severe cases are very rare in the Netherlands.

Mol & Law make two points about this. First, they observe that the elements of the clinical method do not hang together through invariant relations. So *unlike a network*, the elements and the relations are not well defined; there are no forced lines of movement or obligatory passagepoints. Second, they point out, that there are no clearly demarcated African and Dutch versions of medical care. And neither is there a Dutch anaemia that can be separated from an African anaemia. So, *unlike regional space*, the differences in the clinical method are not related to clearly drawn boundaries.

The characteristics of the clinical method seem to be *"variation without boundaries and transformation without discontinuity*" (ibid. p.658). The topology performed by the clinical method is given the name *fluid space*.

Several points can be made about this fluid space.

As already mentioned Mol & Law argue that fluid space has no clear boundaries. Difference is a matter of gradients. When a doctor moves from the Netherlands to Africa, she gradually and continually exchanges elements in her clinical methods.

Second, fluid space is a space of mixtures. Fluids cannot be randomly mixed. They should rather be seen as composed of various more or less viscous combinations. Sometimes elements can be separated: epidemiologists are able to separate diagnosis from treatment. And sometimes separation is impossible: doctors in clinics prefigure their diagnoses in the relation to the possible treatments. (Precisely because iron tablets are cheap and widely available, anaemia is an 'excellent' diagnosis.)

The third characteristic of fluid space/fluid objects is robustness. Because elements and relations do not have to be well defined, and because elements and relations can change gradually, fluids tend to be very robust. "Like guerrilla armies, fluids melt back into the night. They circumvent. They infiltrate" (ibid. p.662). In addition, fluids are able to 'absorb' all sorts of elements created within the logic of other topologies.

.. And Fire Space

In a recent article Law & Mol (2000) have added a fourth kind of space to their list: *Fire space*. They introduce this idea through a quotation from Bachelard. In this quotation he talks about the reverie of a person who stares at the flames in a fire:

> "... the reverie is entirely different from the dream by the very fact that it is always more or less centred upon one object. The dream proceeds on its way in a linear fashion, forgetting its original path as it hastens along. The reverie works in a star pattern. It returns to its center to shoot out new beams"
>
> (Bachelard, quoted in Law & Mol, p. 5)

Drawing on this quote, Law & Mol imagine three characteristics of fire space.

First, they imagine that the continuity of shape in fire space is effected by discontinuity (!). It is the abrupt and discontinuous movements – the shooting out and the return – that makes for the constancy of shape.

Second, Law & Mol think of fire space as a flickering relation between presence and absence. The shape constancy of that which is present depends on that which is absent.

Third, they imagine fire space, or at least one version of it, to be characterised by the 'star pattern', which is described by Bachelard. That, which is present, is a single centre, and this centre is linked to multiple absent Others.

Law & Mol sum up the characteristics of fire space in the following way: "To say that there is a fire topology is to say that *there are stable shapes created in patterns of conjoined alterity*" (ibid, p.5).

To further exemplify the notion of fire space, Law & Mol discuss the empirical example of a formalism which was used by aircraft designers in the 1950's[12]:

$$G = \frac{M}{W/S}$$

[12] The formalism below and the account following it is simplified for the present purpose. For a fuller account see Law & Mol (2000) and Law (2001, chapter 5).

The formalism links a number of terms, which refer to characteristics of an aircraft wing. ‘G’ is the so-called gust response, or turbulence. ‘M’ is velocity. ‘W’ is the weight of the aircraft. ‘S’ is the wing area.

The formalism expresses, that turbulence increases if the velocity is high, if the weight is low, or if the wing is large. This is significant to aircraft designers, because large amounts of turbulence will make the pilots feel nausea or they will even get injured from bumping up and down. And in extreme cases the aircraft itself will break up.

So what does this have to do with fire space? Law & Mol point out the formalism takes us beyond itself. The fact that G cannot exceed a certain level depends on experiments in which pilots have flown aircraft at high speeds and have experienced all the adverse effects of turbulence: blurred vision, nausea, vomiting, black outs. This means the present formalism, figures on a piece of paper, depends on absent others such as vomiting pilots. These others cannot be made present; there is no place for vomit in the offices of aircraft designers. And there are several other absent others; Law & Mol explain, that the formalism also comes with certain decisions about minimum speed. This is linked to the necessity to escape from Russian anti-aircraft missiles. So the Russians and fear of the Russians is also present-absent in the formalism. The formalism depends on it, but it cannot be made present.

So the conjoined alterities of a fire object such as a formalism or a reverie, implies a distinct form. Like a fluid object it depends on movement to retain its shape. But where fluid objects depend of gradual change, the movement of fire objects is an abrupt flickering between absence and presence. This means, almost paradoxically, that the flickering movement makes the *present* part of the fire object *immobile*. The formalism doesn’t evolve or flow, and the reverie doesn’t hasten along as a dream. And this stability is afforded because the flickerings to absent others always return to the present.

Performance

With this discussion of regions, networks, fluids, and fire the question of *space* is drawn into the analysis of performance. The argument is that social objects such as clinical methods or an illness help to perform certain types of space. In line with the modest sociology, the article does not deal with space by ‘identifying’ causes or structures. The contribution is rather to develop conceptual tools for asking interesting empirical questions about the spatial patterns or the effects of ‘the social’.

The first line of questions that can be raised with the concept of the article is *about spatial difference*. What kinds of space are being performed? Does it resemble regions, networks, fluids, fire or something else?

The second line of questions is about *spatial relations*. How is a certain type of space dependent on other kinds of space? How do objects generated within one type of space fare in other spaces? [13] What are the tensions, inclusions or exclusions between various types of space?

The Body Multiple

Annemarie Mol's book *The Body Multiple* is (like Organizing Modernity) a philosophical treatise as well as an ethnographic study.

The topic of the book is neither spaces nor modes of ordering but a particular *object*. The object is atheroschlerosis, or to be precise: the enactment[14] of atheroschlerosis in hospital practice. One might imagine this to be a rather simple and banal affair. After all, atheroschlerosis is a very commonplace disease. But Mol uncovers a surprising variety of ways in which atheroschlerosis is 'done' as well as a number of ways in which the different enactments are made to hang together. Thus atheroschlerosis is seen as a *multiple object*; something that is more than one (non-singular) but less than many (non-fragmented).

With this program of investigation, Mol follows a number of lines that I have already mentioned. She focuses on multiplicity rather than singularity - order*ings* rather than order. In line with the extended principle of symmetry she takes the different 'doings' of atheroschlerosis to be heterogeneous: they are events co-created by humans and non-humans. The social is presumed to be a recursive process: the object of atheroschlerosis is not granted any essential qualities, it is an effect. Finally, reductionism is carefully avoided through the idea of atheroschlerosis as a multiple object: no elements are singled out and promoted to 'causes' or 'structures' underlying everything else. The object *is* the texture of performances.

Below, I will take a closer look at some of the differences and coherences that Mol describes in her study of atheroschlerosis. Again, the purpose is to harvest resources for thinking about performance.

Different atheroschleroses

In the department of pathology atheroschlerosis might be enacted in the following way. An amputated leg is taken from a freezer. An artery is identified and a slice of it is cut out. The sample is prepared and dyed. The

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[13] The second kind of question is asked in relation to Alcoholic Liver Disease in the article "This is Not an Object" (Law & Singleton 2000).

[14] Mol chooses to replace the term performance by the term *enactment*. I will discuss this move in the conclusion of this chapter.

sample is placed under a microscope, and the focus is directed toward an abnormal thickness of the inner coating of the artery. This is what atheroschlerosis *is* in pathology.

In the outpatient clinic atheroschlerosis might be enacted in this way: A patient comes in and complains about pains following walking. A doctor ask him questions about how long he can walk, and if the pain goes away after a break. The doctor asks the patient to take his trousers off, and the doctor feels the pulsations in the leg arteries. The doctor notices if one foot is colder than the other, and he conducts a measurement of the blood pressure in the leg, and he compares it to the blood pressure on the patients arm. Pains upon walking. Weak pulsations. Cold skin. Comparatively low blood pressure. All these are part of what atheroschlerosis *is* in the clinic.

From these examples and many more Mol argue that atheroschlerosis is multiple. As soon as you start attending to the practicalities of enactment, the varieties of atheroschlerosis multiply. The hospital (and the clinic, and the pathology department) turn out to be full of contrasts that can be made the object of further investigations.

Co-ordinating and distributing atheroschlerosis

So how is all this variability handled in hospital practice? Is it a problem, an obstacle, or even a disaster? It doesn't appear so. Mol discusses a number of ways in which differences are co-ordinated.

One way is to *add up* different versions. If two types of measurement differ, then you might nevertheless project a common underlying reality, if you can manage to make one of measurements win. A patient is complaining about severe pain but the blood pressure measurements are normal. In this case you might assume that there is 'in fact' atheroschlerosis, but that the pressure measurement has gone wrong for some reason. Perhaps because veins, that are severely clogged up, are hard to compress properly. And this is necessary to measure the blood pressure.

Another way of adding up is not to bother with the idea of a specific underlying object. Instead the measurements can simply be taken to be indications for action. If one or two or three measurements point in the wrong direction, then something should be done.

Yet another way of handling differences is to *calibrate* different measurements. Figures resulting from a newly developed measure of atheroschlerosis (e.g. ultrasound measurements of blood flow) might be translated to the scales and figures produced by an older and more standard

method of measurement (e.g. X-ray pictures of radioactive dye in the bloodstream).

So differences are not necessarily a problem - they can be added up or calibrated. And furthermore differences that seem to be 'in different worlds' such as accounts of pain on walking and tissues from an amputated leg might simply be distributed to different 'worlds' such as the outpatient clinic and the pathology lab. This does not *fragment* atheroschlerosis; it simply places two versions at different places on a trajectory. This practical way of handling difference – *distribution* – is quite unlike the scientific controversies so often described in the sociology of science[15]. Research laboratories work hard on replication: the perfect reproduction of experiments made elsewhere. And scientists continually try to persuade others that their laboratory possesses the true version of the object. In the hospital, there are no attempts to replicate the enactment at different sites. The clinic doesn't try to imitate the pathology department or vice versa. Consequently, there is no basis for conflicts over who has got the 'true' atheroschlerosis.

Inclusion

In Mol's account of the hospital, *differences* get calibrated, added up or distributed, rather than drawn together, fought over and homogenised. Mol takes this analysis further and argues that a study of enactments alters traditional ideas of ontological scales. In a textbook, reality might be depicted as a number of concentric circles. "A cell is a part of tissue, tissues compose an organ, organs make a body, bodies form a population and populations are part of the ecosystem" (ibid. p.89). However, if practicalities of enactment are attended to, the idea of larger and larger wholes containing everything else dissolves.

As always, Mol argues through specific examples. One example is this: At the end of an operation, when the last sutures are being made, the surgeon might say: "Will someone call his wife?". In this move the surgeon shifts from enacting the patient-as-clogged-arteries into the patient as a social being. Mol stresses that this is not a matter of summing up the blood vessels to produce a whole human being. And it is not simply a matter of zooming out either. What the surgeon does is to *switch* his attention to a different object. So in an account of performances the arteries are not situated *inside* but *alongside* the social being (ibid. p.91-3).

Mol goes on to discuss a more complicated example concerning individuals and populations. In certain contexts and at certain times individuals are taken

[15] E.g. the sociology of scientific knowledge, see Collins (1985).

to be *inside* populations. Every time a diagnosis of atheroschlerosis is made in a Dutch hospital information is passed on to a centre for the study of epidemiology. At this centre, figures are added up and facts of the following kind are constructed: "*In the Netherlands in 1992 170 men out of every 100,000 inhabitants and 70 women out of every 100,000 inhabitants were admitted to a hospital for peripheral arterial disease*"[16]. In this case the population is made up of individuals in a very straightforward way. The population is nothing but a sum total of the individual cases. So the individuals are *in* the population. But Mol argues that the reverse is also true: The population is inside the individual. When individuals are examined the criteria on which they are judged are often derived from population studies. What is a normal level of cholesterol in the blood depends on the average level for men or women in a given population. So somehow the population is included, when an individual is enacted. In certain cases these mutual inclusions might even lead to circularity. Mol has interviewed a professor in epidemiology, who pointed out that mortality statistics might influence the cause of death written on death certificates. When a physician is called out to a patient, that has suddenly died, he must fill out a cause in the death certificate. Epidemiology has produced the well-recognised 'fact', that men are more prone to heart attacks than women. For that reason, the physician is likely to expect a heart attack in the case a man and look for other causes in the case of a woman. Consequently, the fact of heart attack being a predominantly male disease is reinforced.

Performance / enactment

Mol's concept of the multiple object constitutes an attempt to rework the ontology of traditional social science. Objects are no longer attributed essential qualities, they are seen as network effects. Objects are no longer attributed singularity; they are seen as multiple enactments. Objects are no longer attributed a fixed spatial relation in a world of objects, they are included in and including other objects. In short, one might say that the object 'as we knew it' is dissolved into a process ontology of enactments, distributions and inclusions. This leads to a host of new empirical questions about how 'an' object is enacted differently, how tensions and differences are co-ordinated, and how the object hangs together.

Aircraft stories

The final book in this selective review of studies of performance is John Law's *Aircraft stories* (2001). The book is a study of a British attempt to

[16] Mol quotes a report from the Dutch Heart Foundation, ibid p.96

build a particular military aircraft - the TSR2, a tactical strike and reconnaissance warplane. The project was initiated in the 1950's and it was cancelled in 1965 by a newly elected Labour government.

John Law explores various specificities of this project. A sales brochure, the construction of a wing, the decision to cancel. These analyses take up a number of leitmotivs already presented in this chapter. Law shows how objects are performed in multiple ways, and how their appearance of singularity is a precarious achievement. What I find particularly interesting is the way in which Law includes *talk* in the realm of performances. In the following I will go into more details about this particular aspect of the book.

The performativity of talk

From the beginning of the book Law stresses that talk is performative. When something is said or written, it somehow helps to produce, what it talks about. This claim is of course another version of the reflexivity argument; we ourselves are engaged ordering when we try to study ordering. Talking or writing do not constitute detached spaces of non-engagement with the world.

Law develops this point further through a discussion of the *speech act theory* by the philosopher J.L Austin. Austin is well known for making the distinction between performatives and constatives.

A *performative* is a statement, which is also an act. If you say 'I do' under the right circumstances such as a properly conducted wedding ceremony, then you produce the effect of getting married.

A *constative*, on the other hand, is different from an act. Law illustrates this by the example of hearing on the news, that 'the government has fallen'. If you repeat this statement, e.g. by sharing the news with a friend on a later occasion, your statement ostensibly doesn't make any contribution to the 'fact' it talks about. Common sensically we would say that is simply a report.

Law goes on to introduce two more statements that challenge the sharp dichotomy between performatives and constatives. The statement '*I love you*' might in Austin's terms be described as a constative. It reports a fact. But the statement is also a performative. Said under the right circumstances it might be the beginning of a love affair or a re-affirmation. However, the performative effect of 'I love you' might be uncertain: "if it were said in the 'wrong way' or the 'wrong circumstances, it might be the end of a love affair or a friendship' (ibid. p.157). So the statement 'I love you' is constative that aspires to be a performative – and whether this is achieved depends on specific conditions.

Specific conditions are also evoked by the next statement discussed by Law*: 'The government will fall tomorrow*'. This is a statement, which we can attribute to the thousands of demonstrators on the Wenceslas Square in Prague on the night of the Velvet Revolution. By saying this statement, by assembling, and by clinking their keys, the demonstrators did in fact perform the departure of the government the following day. So this is another statement which is both constative and performative. In fact, Law points out, that this statement is constative precisely because it is performative. A self-fulfilling prophecy as we say in psychology.

Law lists the various statements in the following table:

	'I do'	'I love you'	'The government will fall tomorrow'	'The government has fallen'
Action (performative)	✓	✓	✓	
Report (constative)		✓	✓	✓

(Ibid. p.158)

One way to sum up Law's arguments is to say that in rare moments a statement might achieve an effect with a fair amount of certainty. In this case we might describe a statement as a performative. Also in rare moments a statement might talk about a fact with a fair amount of detachedness. In this case we might describe the statement as a constative.

But all of this is a matter of degree, not of qualitative difference. The more you control the action the more you can call yourself performative. The more you can distance yourself from the action the more you can call yourself constative. However, no one can obtain full control. Even the 'I do' of a wedding ceremony doesn't do it without the co-operation of a lot of other conditions. And conversely, no one can obtain full detachment either. A statement always overlaps or interferes with others, and it always somehow helps to bring about certain intended or unintended conditions. If you want to argue that I am not a part of the action, when I repeat that the government has fallen, then you are simultaneously performing a boundary around, say, parliamentary games, rather than around, say, democracy and public life. So the achievement of a constative effect is dependent on the arrangement of

specificities. And one could even argue that precisely because I speak in constative ways about the government, I am playing my role as *not* a part of the action - a role that is crucial to the performance of representative democracy.

Consequently, no statements are purely constative or purely performative. All statements are in the slippery space between performative and constative.

Conclusion

In this chapter I have introduced the turn to performance in STS by reviewing a number of studies. I am quite prepared to apologise to the reader, who has found this 'tour' a bit too kaleidoscopic. The prime reason for the many-sidedness of the present chapter is this: The performative turn is not simply a claim about a particular object out there and neither is it simply about a particular method used in here. It is rather something in between. For the sake of clarification, however, I will try to press the notion of performance in the object-direction and the method-direction respectively, and try to approximate a definition.

As an 'object' performances can be said to be particular patterns that can be imputed to the social. We have come across a number of these putative patterns. A type of mini-discourses called *modes of ordering* for instance: enterprise, administration, vision and vocation. A variety of spaces or *topologies* for instance: regions, networks, fluids and fire. Objects which are somehow more than one but less than many, so-called *multiple objects*, for instance a disease or an aircraft. None of the authors I have come across, attempt to limit the study of performance to objects, spaces or mini-discourses. Much less do they attempt to prioritise these options or make one engulf the others. In fact, in seems to be a matter of analytical discretion as to which type of performance will play the principle part in the analysis. This can be elucidated through an example taken from Mol (2001). She explains that the laboratory practice of angiography creates something akin to a 'road map' of atheroschlerosis. In this case we might chose to focus on (1) laboratory practice - a vocational mode of ordering. (2) The 'road map' - a type of space. Or (3) atheroschlerosis - a multiple object. This makes it clear that the spaces, objects and modes of ordering can be considered supplementary rather than competing tools for imputing patterns to the social. And this in turn opens the possibility of using several of them together. A possibility that I will utilise in the following chapters.

So far I have simply mentioned a number of examples of 'patterns imputed to the social'. It is however possible to list certain characteristics of these

patterns. First, performances are *recursive processes*. They are continually emergent outcomes of interaction. Second, performances are *materially heterogeneous*. They are about talk, bodies, texts, machines, architectures, materials etc. Third performances are somehow *bounded*. They do not exist in and off themselves. They exist in multiple relations to other performances: conflict, inter-dependence, mutual inclusion, tension, interference etc. So if we press the notion of performance in the object-direction, we might say that performances are unbounded, materially heterogeneous, recursive processes or patterns that can be imputed to the social.

If we choose to look at the performative turn as a method or an analytical sensitivity, something else comes into view. First, the claim is that the social can/should be investigated by attending to specificities of doing. The focus is on the details of materially heterogeneous events. Furthermore, there is an attention to *differences*: how are objects, spaces and orderings done differently? And following this there is an attention to the partial and specific forms of *relatedness* between the different performances: distributions, inclusions, tensions, dependencies and the rest. So as a method, the performative turn can be defined as a sensitivity to specificities of materially heterogeneous events with special reference to differences and relations between performances.

In addition, the performative turn comes with a certain reflexive attitude. Texts are taken to be performative, so writings about performance - as well as any other writing - participates in the orderings of the world. This calls for modesty, in that no claims are made to tell the whole story and no efforts are made to hide the author, or to pull what Donna Haraway has dubbed the god-eye-trick of seeing everything from nowhere.

As a final effort to clarify the performative turn, I will position it in relation to a number of other theoretical traditions.

Very broadly, the performative turn is a way to refuse the choice between the modern and the post-modern. The modern is about order and purity. The post modern is a celebration of fragments and disorder. The performative turn is a series of claims and sensitivities that try to reach a fractional space in between. Something that is beyond the mono-dimensionality of modernity and beyond the free-floating multi-dimensionality of the post-modern. In this sense it has much in common with the parts of the ANT-tradition that claim to be non-modern. (See Latour, 1993)

This ‘in between’ position is also salient in relation to the speech act theory of J.L. Austin. The dichotomy between constatives and performatives is questioned by Law, who argues that most if not all statements are to be found

in a slippery space in between, aspiring to either performative or constative effects. Thus the question of constative vs. performative is turned into an empirical question, and thus potentially an object for a sociology of performances.

The term performance is easily confused with a number authors and traditions that use it to designate the 'front' of something underlying, hidden from view. For instance in linguistics it is common practice to distinguish between underlying competence versus overt performance. And the sociologist Erving Goffman is well-known for his studies of the 'performance' as the presentation of self in public as opposed to the 'back stage' behaviour exhibited when a person believes he is in private (Goffman, 1959). The performative turn has no truck with any of this. The performative turn does not come with the notion that performances are presentations of some underlying reality. An assumption of this kind would amount to the asymmetrical move of dividing phenomena into drivers and the driven. In addition, the idea of performance as a front would *a priori* make the presence of other humans the single most decisive factor that configures performance. However, Mol points out that certain other aspects of Goffman's theatrical metaphor are quite useful. For instance the idea, that a performance can have a script and that there can be improvisation. And the idea, that performances are staged and employ certain 'props'.

Garfinkel's notion of accomplishment (Garfinkel, 1967) is also somewhat akin to the notion of performance. Obviously, the performative turn shares the critique of the systemic abstractions of structural-functionalism and it endorses the claim that social reality is created, as it where, everywhere and on the ground. But the performative turn broadens the scope of actors to include non-human actors, and in that sense it is rather different from ethnomethodology. An even more important difference is the notion of social order. Garfinkel makes a contrast between the order generated through social accomplishments versus the disorder in awkward situations such as breaching experiments. The performative turn doubts the image of a by and large ordered society with cracks of disorder, or even the image of isles of order in a sea of disorder. In fact, the performative turn doubts the very opposition between order and disorder. In the performative turn, this dichotomous notion is replaced by the notion of multiple incomplete and interfering order*ings*. Consequently, performances are not equivalent to accomplishments defined as successes on some putative scale of order. Performances are multiple, emerging and partially interdependent orderings some of which collude, and some of which disarray each other.

Finally, I should mention that Annemarie Mol has proposed to replace the term performance by the term enactment (Mol, 2001, ch.2). She argues that performance carries a number of confusing connotations, such as the ones mentioned above; many readers come to think of underlying competence or performance as a successful achievement of order. Mol suggests that the term *enactment* carries fewer loads. I have no doubt that this word exchange is a productive disentanglement move in the fields of sociology, medical anthropology and philosophy, which Mol is engaged in. But in the field of organisational theory, which is engaged by the present text, the term enactment is very closely connected to the work of Karl Weick (1993). In his work enactment is linked to human sense-making, which is yet another inappropriate connotation of enactment. (Performance is broader and more heterogeneous than sense-making). So the dream of a relatively 'unspoiled' concept is scattered once again. For this reason I will stick with the term performance, hoping that the reader will bear the above-mentioned provisos in mind.

Chapter Five

Orderings and Spaces in Social Administration

In this chapter I will begin the work of combining the concepts of the performative turn with the empirical material gathered from the team project.

The empirical material will be introduced in the form of four cases. These cases trace a chronological story about initial discussions in the team project, the increased focus on the issue of how to subdivide the team, the decision about a particular kind of subdivision, and the subsequent fate of this arrangement.

Along with the chronological story I make a running commentary in which I impute patterns or performances to the material. I have chosen not to restrict the commentary to one particular conceptualisation of competence. But most of the performances, which I point out, are akin to John Law's modes of ordering. To some degree, I take this description of performances to be an interesting piece of ethnography in itself because it suggests how things and people get ordered in this social administration. However, the primary significance of the description of performances is that it allows me to raise the next question: What is the relation between these performances?

In each of the four empirical cases I attempt to characterise the pattern of relations, and at the end of this chapter I will suggest that the relational patterns in each of the four cases represents a particular spatial type.

The first case, that I analyse, is a brief discussion about the opening hours in the local centres. In the course of this discussion several opposing performances are articulated, but the performances remain relatively unrelated and unaffected by each other. This relational pattern might be seen as a case of *regional* space.

In the second case, the question of how to subdivide the team into smaller groups is discussed in a large meeting. This issue is staged in a way that brings out different performances and relate them in such a way that retreat is impossible. A conflict has been articulated. This relational pattern might be seen as a case of *fire* space.

In the third case, a working group continues the work on how to subdivide the team. In this event, certain performances form an alliance and this alliance becomes sufficiently dominating to produce a 'solution' to the problem. The solution is the construction of a new set of regional boundaries. This relational pattern might be seen as a case of *network* space.

In the fourth and final case, the different performances that were connected in the product of the working group start to get displaced. The new set of regional boundaries does not hold or contain the work of the local centre. Instead the performance of the new regional boundaries get mixed up with or incorporated in the performances that they were supposed to replace. This relational pattern might be seen as a case of *fluid* space.

So chronological story along with the commentary trace how different performances get related and how these relational patterns can be characterised. The overall conclusion would be something like this: The 'development' of the adult team is not a matter of replacing the old with the new, but rather a matter of a finding ways to handle the tension between the simultaneous performance of the old and the new. Or to put it in another way: the metaphor that doesn't work is the idea of a homogenous region of the new pushing back a homogenous region of the old. The metaphor that *does* work is the idea of performances that are in tension, form alliances, get implicated, resonate, and try to exclude each other.

With these overall lines of argument laid out, I will present some background information about the team project, the local centre and the social workers.

Some Background Information

From the perspective of central staff members in the FLMA (Family and Labour Market Administration), the team project has moved through three phases. First, there was a long phase of discussion, planning and decision that led up to the project. Second, there was a phase of changing the formal organisational structure, including the hiring of new team managers. In the case of the adult teams, this phase also entailed the locating of supports persons and home advisors in the local centres. These professional groups were elsewhere before. Finally, there was a third phase, which was about making the teams work. The first seven months of this is what I will investigate in detail here. A number of the team's activities in this phase were laid down by a standard program, which had been decided by the board:

- Introductory meeting at the central offices of the FLMA (case 1).

- Team training session with a consulting firm (case 2).
- Team Profile: All team members are asked to fill in a questionnaire designed to measure the 'developmental stage' of the team(case 4)
- Two more days of team training (case 4)
- Second Team Profile measurement (case 4)
- Last team training session (case 4)

In addition to these scheduled activities there were a number of meetings in the local centre in relation to the team project (see case 3 and 4).

The adult team consisted of four different professional groups. The table below displays some basic information about these groups and their clients.

In this text, I use the term *social worker* as a cover term for the four different professional groups below. To the Danish reader this might be slightly confusing because the subgroup of the caseworkers, who have a three year education in social work (Danish: socialrådgivere), are often translated to 'social workers' in English. What is a cover term here is thus used as a more specific term in some other contexts.

	Caseworkers	**Home-helpers**	**Home advisors**	**Support persons**
Staff	total: 20 3 caseworkers specialised in early retirement 10 specialised caseworkers specialised in supplementary benefits 7 office assistants	total: 13 1 'co-ordinating home-helper' (a middle manager) 3 with a health assistant education.	total: 9 1 'co-ordinating home advisor' (a middle manager)	total: 3
Clients	3039 clients divided into 40% on supplementary benefits and 60% on early retirement. All of these clients meet the criterion of requiring a special effort before they will be able to re-enter the labour market.	138 clients, most of these of these alcoholics, mentally ill, mentally handicapped or in other ways 'marginalised'.	About 60 clients. All mentally ill.	about 20 clients All mentally ill.
Services	Administration of early retirement, supplementary benefits, and a variety of other benefits. 'Activation', i.e. the furthering of clients' participation in education, work-projects, rehabilitation, etc.	Cleaning, shopping, laundry, dressing, mobilising, personal hygiene, administration of medicine.	Supported housing, and supporting visits to mentally ill clients living in their own home.	Contact and support to severely mentally ill people, who are unable or unwilling to receive any other services.
Loca-tions of work	Two reception areas and eight small offices in the local centre.	The clients' homes. One office and a meeting room in the local centre.	Supported housing and the clients' homes. One office and a meeting room in the local centre.	The clients' homes. One office located outside the local centre.
Misc.			The home advisors were made a part of the local centres in connection with the team project. Half of the clients are located outside the geographical area of the local centre.	The support persons were made a part of the local centres in connection with the team project.

Figure 5. The professional groups of the adult team

Case 1. A discussion about Opening Hours

"When a region is defined the differences inside it are suppressed. (..)
So it's possible to build a version of the social in which space
is exclusive. Neat divisions, no overlap, here and there,
each place is located at one side of a boundary"
Mol & Law (1994, p.646-7)

I will begin this search for different performances and the relational pattern between them at one of the introductory meetings in the team project. The meeting took place in conference room, which is a part of the central offices of the Family and Labour Market Administration. The purpose of the meeting was to introduce the team project to a group of about 40 social workers, who were to constitute a team in one of the local centres. Like a number of teams before them, these social workers had been summoned to the headquarters to receive information on the aims of the new team structure, and to be given the opportunity to ask questions to a member of the board.

Below, I will reconstruct a small discussion that took place at this meeting. The speaking participants were a leading staff member from the central administration, a caseworker from a local centre and the manager of that local centre. Apart from these three there were, as I said before, about 40 social workers listening to the discussion.

1	Central staff member:	We have made our own little phone survey. We found that the city of Copenhagen has the worst opening hours in Denmark, compared to the other municipalities.
2	Caseworker:	The worst opening hours in Denmark - is that in a comparison to other municipalities or with respect to the users' needs?
3	Central staff member:	The politicians and the citizens regard it as a bad political signal that we are closed from 1 PM.
4	Caseworker:	If we are going to have longer opening hours, the time for reflection and follow-up will suffer.
5	Manager:	There is a study that shows that the largest cities have the shortest opening hours
6	Caseworker:	Of course! When there is inadequate staffing, you have to limit the opening hours to make room for the

		administrative work[1].
7	Manager:	But we have the same number of clients regardless of the opening hours
8	Caseworker:	When I said that this has to do with inadequate staffing, I sensed that the colleagues were nodding. This is how the colleagues feel!
9	Central staff member:	This is also related to phone service. If we get better at giving people full information and connect them to the right person, we would save a lot of time for the clients and ourselves.

In the above exchange, social work is performed in a number of different ways:

Firstly, the local centre is performed as a *point in a statistical distribution* (1; 5). This is done in the talk of manager and the central staff member. But there is more than merely talk; the statistical performance draws on particular props such as data and surveys and it crucially involves the acts of comparing and ranking the municipalities. This is not simply an exercise of facts, it also performs a particular kind of morality; the claim is that being at the bottom of a ranking is blameworthy. To have the shortest opening hours is equivalent to having the 'worst' opening hours.

As a critical reply to the statistical performance, the caseworker speaks of the centre as functional with respect to the users' needs (2). This *user-functional performance* often 'loads' itself with stories of how individual clients derive problems and successes from the services provided by the local centre. This performance of social work is primarily carried out by social workers, who have daily contacts with clients and therefore know a lot of stories about them. But occasionally others also perform social work in this way; in the introductory chapter, I mentioned that managers tell the story of clients running the gauntlet between offices.

A third type of performance is to speak of the social work as implementation of the wills of politicians and citizens (3). In this respect short opening hours are referred to as a "bad political signal". This *political performance* entails references to political statements, positions, and evaluations of the present political trends in the political leadership of the Family and Labour Market

[1] Generally, the work of a caseworker has two parts: While the client is present, the communication is primarily verbal; needs are established, agreements are made, procedures are explained, etc. When the client has left, the caseworker does the administrative work; writing in the case file, drafting up letters, starting benefits by means of the computer system.

Administration. This type of performance is almost exclusively done by members of the board and the central staff members, who are close to the politicians.

A fourth performance is to speak of the social work as the exercise of *professionalism* (4; 6). This performance is mostly carried out by persons who service clients every day and who are trained in social work. References are made to professional discretion - the right and ability to make judgements regarding the nature of social problems and the appropriate course of action. The strength of this performance is also achieved by making links or references to the community of professionals: the colleagues.

The four different performances are mobilised and get related to each other in the discussion about opening hours. This discussion can be seen as a struggle over the construction or deconstruction of an organisational fact. "The badness of the opening hours" is launched by the central staff member as *statistical* fact. The caseworker makes a deconstructive move by emphasising *user-functionality* as an equally valid criterion. At this moment "Bad opening hours" is no longer an irresistible fact but merely one of two viewpoints. Responding to this, the central staff member enrols the conceptions of *the politicians and the voters* on his side of the argument. In this way he adds to the construction of "bad opening hours" as an irresistible fact. But then, the caseworker claims that an expansion of the opening hours would conflict with the time for reflection and administrative work, and he furthermore enrols his physically present *professional* colleagues as support for this performance. This move appears to discourage the central staff member from further attempts to establish 'the fact'; he retreats to the issue of how time can be used more efficiently within the present opening hours.

Clearly, there are two bands of performances in this discussion. The political and the statistical performance of the social work combine in the efforts of the central staff member, whereas the professional and the user-functional performances work together in the arguments of the caseworker. The two parties enrol more and more allies on either side, but it is also interesting to notice that they carefully stay away from the 'home ground' of the other. The central staff member doesn't say anything related to the professional performance of the work, and he makes no claim about what is useful for the users. Symmetrically, the caseworker makes no claims about what the politicians or the citizens want. And he makes no comments on the statistical survey of opening hours. At one point the manager offers a middle ground of commonsensical logic, with the statement: "But we have the same number of clients regardless of the opening hours" (7). If the caseworker enters this ground, he would immediately have to explain why the opening hours should

have any effect on the amount of work related to a fixed number of clients. However, the caseworker refuses to get into this. He never reveals if he understands or agrees with the manager's 'logic'. Instead, he mobilises his colleagues behind the claim that this has to do with inadequate staffing (8) [2].

It is tempting to say that nothing really happens in this discussion; no one moves and the conversation drifts to another topic. But this would overlook the fact that this event performs a certain distribution of resources and positions from where to make knowledge claims. Who can make knowledge claims about what in which ways? This question and its usual answers are rehearsed. The event is thus a part of an on-going *labour of division*[3] between actors in the social administration[4]. So the event is not simply 'about' social work, it is in fact co-constitutive of what social work in this administration *is*. It does indeed perform social work. It performs social work as certain *areas of expertise*, which are largely unaffected by each other. In this state of affairs there is no room for the manager's commonsensical logic or other things common such as a consensual evaluation of the opening hours. These entities, which cannot be located within a particular area, are either left unsupported or actively deconstructed. This then is one of the patterns of performances in the social administration; A world of mutually exclusive areas of expertise with nothing in between.

[2] The theme of refusing to get entangled has been thoroughly discussed by Callon & Rabeharisoa (2000). The terms entanglement/disentanglement, which I use in the following is borrowed from this article.
[3] This term is borrowed from Robert Cooper.
[4] In addition, it should be noted that there is always a price to pay. The construction of one world implies the destruction of others. The performance of different areas of expertise precludes a consensual evaluation of the opening hours.

Case 2. A Team Training Session

"To say that there is a fire topology is to say that there are stable shapes created in patterns of conjoined alterity"
Law & Mol (2000, p.5)

As a part of the 'implementation' of the team project, the board of the Administration hired a private consulting firm to be in charge of four days of team training for each team. In what follows I will analyse the pattern of performances in the first of these team-training sessions.

The general discussion in this session was the question of how to subdivide the team. From the very beginning of the project, central staff members had pointed out that 46 social worker cannot collaborate on a daily basis, so somehow the team had to be divided into a number of smaller groups. No one seemed to disagree with that, but the question was how to do it.

In the team training session, the social workers were expected to participate in a decision about this problem. In the course of this a number of different performances, which I will describe in detail, were brought out. The plurality of performances is similar to case 1, but I suggest that case 2 is different in at least one important respect. In case 2 the issue of grouping is staged in such a way that the different performances cannot continue unaffected by each other. The performances seem to get entangled.

The Making of a Day to be Seized

On a normal working day, the four professional groups work independently in the local centre and in the field[5]. The only exceptions to this rule are a few particularly hard cases in which cross-professional co-ordination takes place on an ad hoc basis.

For the team training, the professionals were summoned to an education centre in a different part of the city. It goes without saying that all appointments with clients were cancelled on this day, and that numerous non-human actants were left behind in the local centre.

[5] Caseworkers work almost exclusively in the local centre. The home-helpers, home advisors and support persons spend most of their working time in the field.

> At the education centre, the professionals were placed in a conference room with tables and chairs placed in a horseshoe formation[6]. Individuals were thus placed on one long line (with two bends), and every individual was facing (almost) every other individual. However, the professional groups were also visible in the choreography, because almost everybody seated themselves next to their closest colleagues. So give and take a few exceptions, the horseshoe consisted of a line of caseworkers followed by a line of home-helpers, followed by a line of home advisors etc.

What I have described so far, could be thought of as number of more or less partial *detachments*. Detachment from clients, detachment from the materialities of the local centre, and detachment from the professional colleagues[7]. These detachments serve to create an *empty space*: In the calendars, in purpose of the day (no agenda has been given), and on the floor in middle of the horseshoe. This space performs an *opportunity* to do something but also a *demand* to do so. All these appointments cannot be cancelled for nothing. All these wage hours cannot be wasted. All these people cannot be seated in this way without talking about something important. So the scene is set for making something of the void. A day to be seized has been made. The attention is drawn to the chief consultant who is about to make his introduction.

> The chief consultant starts by stating his name, and briefly going over his previous work experience. We learn that he has held the position of administrative director in another municipality for 7 years, and that he has worked in the consulting firm for 13 years. The assistant consultant makes a presentation in a similar format, mentioning her law degree, her background in the national central administration, and her 10 years of seniority in the consulting firm.
>
> A third consultant introduces himself. He is an internal consultant from the central administration of the Family and Labour Market Administration. He explains his role as the supervisor and facilitator of the team, and he mentions his long experience with various social work projects.

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[6] To be precise: The tables were arranged as three sides of a square. In Danish this arrangement is typically referred to as a horseshoe. I will use this term in the following.

[7] The creation and use of off-site arrangements is a very common practice in organisational development.

The short presentations do a number of things in terms of defining roles and assuring the social workers that the people standing before them are competent and experienced. In this way, the presentations add to the *opportunity-charging* of the empty space; the agenda is still not revealed, but the social workers are told that an impressive amount of experience will be at their disposal in the following hours.

Entering the Empty Space

> The chief consultant's next move is to tell that he has a standard plan for the day. This is the plan that has been used with most of the other teams in the Administration. The plan has two elements: First, getting to know each other better, and second the issue of grouping. He asks the audience whether they want the standard plan, or something else. The social workers seem somewhat surprised. They start to talk a bit with their neighbours, and after a short while, two or three people say they go for the standard plan. The chief consultant takes this to be general consensus.

In the above event, the consultant places something in the void: A decision between two alternatives. By doing so, he performs the group as a *decision-making body*, and soon a few of the social workers support this performance by entering the empty space and stating their opinion. The consultant then takes these few people to be representative of the rest. In this way, the few people who spoke up get enrolled as representatives for their silent colleagues.

> The next move by the consultant is even more surprising. Smiling, he declares that he will invite everybody to a cocktail-party. Cocktail parties are about meeting new people, he explains. So he will ask everybody to get up from the chair and go to the empty floor in the middle of the horseshoe. In there, everybody should seek out someone they haven't talked to before, introduce themselves, and strike up a conversation. The social workers respond to this suggestion as a fun and somewhat crazy thing to do. They all go into the horseshoe and quickly there is a loud buzzing of voices from the 'cocktail-party crowd'.

In a very literal sense, the cocktail party exercise places the team in the empty, opportunity-charged space. The team members themselves are now in the centre. And they are engaging in an exercise that performs team members

as people with a specific conduct. First, the conduct is about having *fun*. (I will return to this). Second, it is about *civility*. The civility entailed in playing cocktail-party means that the team member is supposed to express interest in others, and to tell the group something about herself. In this mode of interaction, there are no intermediaries such as outspoken colleagues or middle managers between the individual social worker and people from other professional groups. She is expected to speak for herself. In this way, the exercise adds to the work of detaching the individual from the professional group.

Judging from the tone of voices everybody regards the exercise as fun. However, fun can be hard to resist. Not having fun in the midst of group of people having fun may be very awkward, and you may have to explain why you are 'such a bore'. Furthermore, particular materialities of the cocktail exercise work to make it difficult to escape participation. Let us imagine that one of the social workers did *not* want to participate. That person would be extremely visible if she remained in her seat on the outside of the tables, while everybody else was inside. Or image that someone changed her mind after entering the floor. If she wanted to escape from the crowd of people presenting themselves and expecting to be responded, she would either have to climb over the tables surrounding the group on three sides, or she would have to walk past the smiling chief consultant standing by 'the teachers desk' on the fourth side. In effect, she would be trapped in the zone of fun and civility. So what is performed here could perhaps be termed the *obligatory fun* of teamwork.

> After 'the cocktail party' and a short smoking break, the social workers gather in the horseshoe again. The chief consultant introduces the next exercise. Pair with you neighbour and interview each other about your backgrounds for 10 minutes. Afterwards, everybody will be asked to present his or her neighbour to the rest of us. Again there is buzzing of voices, and everybody works busily on the task. When time is up the round of neighbour presentations starts. The social workers represent each other in a format that somehow resembles the earlier presentations given by the consultants. The first name and the present job in the local centre are stated. Most people also mention the educational background, and earlier jobs in the social administration or elsewhere. A few people tell of their neighbour's positive or negative expectations to the team collaboration.

The round of presentations contributes to a number of performances mentioned above. First, *individualised civility*. In this exercise every social worker is expected to account for herself to her neighbour, and she is expected to display interest. And again, there is little room for escape; if someone chose not to participate, the void in the continuous round of the presentations would be highly visible. Second, there is the *charging* of the empty space. The long list of presentations seem to convey the message that the social workers bring an impressive amount of education, and experience to the disposal of the meeting. Third, *detachment*. The presentation of individuals works against an ontology of professional groups.

However, the presentation exercise also performs something new. Every single person is now called to speak in public in front of everybody else. So the individual is performed as a *contributor* to the empty space.

After another short break, the chief consultant introduces the plan for the rest of the day. There will be group discussions about the issue of grouping. And there will presentations of the group discussions, and further discussions in a plenary session. But before going into groups he will ask the audience to formulate some principles for grouping. "What should we take into account when we discuss the grouping of the team?" He places himself next to a flip-over and picks up a pen. A number of different social workers speak:

- cross-professionalism
- no reduction in service
- good lines of communication
- interest, motivation, commitment
- sufficient professionalism
- opportunities for job rotation
- consideration of target groups
- respect for the expertise of individuals

The chief consultant takes everything down. There is no discussion about the principles. Afterwards, the second consultant divides the team into 6 groups that mix the different professions. She walks the inside of the horseshoe counting numbers 1 through 6, assigning a number to each social worker. Then she goes to the blackboard and writes list of rooms. She asks the ones

to go in room X, the twos in room Y, etc. The social workers start moving to the group rooms.

With the list of principles, things get complicated. What is being evoked with all these different 'principles'?[8] Are they in conflict, or can they be reconciled? For the moment I will not get into these questions. Instead, I will focus on how the team is performed by the work of the consultants. By asking the team to formulate *principles* for the ensuing group work, the team is once more performed as a decision-making body. Organisational theorists[9] often make a distinction between two kinds of decision-making. One is about ratification and approval of ideas that have emerged in the lower echelons of the organisation. The other is about pro-active strategic planning. Obviously, the stating of principles is related to the latter kind. So the collective team is performed as a *planning actor*, and the groups are assigned an executive role[10].

Finally, the creation of groups that mix the professions can be seen as yet another contribution to the work of detaching individuals from professional groups.

In my account of the team training so far, I have described a series of events that perform the social workers' participation in a decision about grouping. The performances work to detach the social workers from clients, local centre materialities, and professional groups. They further work to create an empty space of opportunity and demand for action. In this void, the social workers are performed[11] as individuals engaging in civility, obligatory fun and capable of speaking in public. Finally, the collective team is performed as a decision-making body and a planning actor formulating principles for the work in smaller groups. Taken together these performances seem to suggest that the

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[8] The principles might be read as parts of the performances of social work, which I sketched in case 1: (A) Social work as *professionalism* (good lines of communication / interests, motivation, commitment / sufficient professionalism / opportunities of job rotation / respect for the expertise of individuals), (B) Social work as *user-functional* (no reduction in service), (C) Social work as the expression of *political will* , i.e. the officially stated goals of the team project (cross-professionalism / consideration of target groups).

[9] E.g. Mintzberg (1994).

[10] Making the employees participate in key decisions is another very commonly used procedure in organisational development.

[11] The passive form "the social workers are performed as.." is a deliberate choice. If I had written "the social workers perform civility" it comes close to a simplistic attribution of the actions to the individuals. I consider the performances to be orderings, which are stretched over bodies, places, materials etc. The most precise phrase would probably be "the social workers are performed as *and* perform themselves as civil individuals". But this is rather awkward, so for the sake of simplicity I will use the passive form in the following. However, this does *not* mean that I consider the social workers to be passive.

present assembly of capable individuals should seize this unique opportunity to come together as a team and make a strategic decision.

Preparing a Decision

When the social workers left the conference room, I followed one of the six groups into a smaller meeting room. Seven people gathered in this room: The team manager, two home-helpers and four caseworkers.

In their discussion, they almost immediately outlined two alternative ways of grouping the team:

(1) Geographical grouping – dividing the area of the local centre into regions, and allocating social workers from each professional group to the regions. This would amount to a number of smaller 'copies' of the adult team.

(2) Target group division – dividing the clients into different targets groups (mentally ill, substance abuser, etc.) and allocate the social workers accordingly. This would amount to a number of specialised teams.

The participants quickly went into details with the first one. This was initiated by the manager, who said, "Let's play with the idea of geographical grouping". But it was quickly followed up by the others who suggested a number of advantages and practical solutions related to this particular division of the team. The combined effort produced the following ideas and arguments in relation to the geographical division:

The benefits of geographical division are many: Every region gets a good coverage of expertise. The division mixes the professional groups and thus enables cross-professional collaboration. The division creates a variety in the daily work of the individual social worker. Moreover, if three regions are chosen, each region could have one of the three support persons and one of the three caseworkers specialised in early retirement. With three groups there would be about 15 social workers in each. This is considered a manageable size, and sufficiently large to stand up to events of illness and holidays. Finally, the geographical division will make the distribution of new clients very easy. You simply ask them where they live. The division of the existing stock of clients will require data on the distribution of clients on street names. But these data should be fairly easy to obtain.

The group also identified a number of potential problems related to the geographical division. First of all, there might be some *serious demarcation disputes* if some professional groups have to broaden their scope of work. In particular this is the case for the home advisors, and for a subgroup of

> the home-helpers who have a health assistant education. If these professional groups were to take part in traditional home help, such as cleaning, the present group believes that it would raise an outcry.
>
> Second, one of the home-helpers in the group remarked that his professional group needs a meeting every morning to co-ordinate the work of the day. Most of the agenda on the morning meetings would be totally irrelevant to others. Thus, there is a problem of *relevance*, or lack thereof, in cross-professional meetings. Third, the group discussed the impossible problem of getting *suitable rooms and offices* for three groups. However the topic was quickly abandoned because the manager remarked that this problem would be the same regardless of the type of division.

The above discussion provides an opportunity to continue the analysis of how the social workers are performed in relation to the decision about grouping. I will begin by pointing out that the *professional groups* are now being performed. The different types of divisions are seen as different ways to allocate the professional groups, and there is discussion about the needs of the home-helpers, the likely outcry of home advisors etc. The professional groups are performed as *interest groups*, groups that will inherently appreciate or protest certain courses of action. This makes way for a particular role to play for the social workers in the present group. It may appear that they speak as representatives for their own professional groups. But this doesn't fit the fact that they also talk about the reactions of other professional groups. I'll suggest that the performance is closer to that of a *modest witness*[12]. The social workers don't make demands; they simply tell how their colleagues or other professional groups will respond. In that sense, the talk about the responses of others and the talk about practicalities, such as the ease of client distribution, are *two of a kind*. It is all about *facts*. The social workers are thus performed as people who know the business, who can predict what will happen, and who know what is possible. All this knowledge they contribute to the enlightenment of the manager's choice between two types of grouping. A recommendation is worked out, and the pros and cons are neatly listed. Approaching the ideal of a *civil servant*, the social workers supply the objective facts related to a decision to be made by somebody else. So along

[12] The term is borrowed from Haraway (1997). She uses this term, somewhat ironically, to refer to the enlightenment figure of the scientist as a non-interfering witness and a neutral spokesperson of the workings of nature.

with the performance of civil servant comes the articulation[13] of an *informed decision*.

Facts and Interests in Public

> Back in the conference room, the chief consultant prompts a round of presentations from the groups. It turns out that the first three groups have articulated a similar decision between geographical and target group division. And they all recommend the geographical division. During the presentation, one of the caseworkers comments that the support persons and the home advisors will be against the geographical division. This immediately provokes a response from one of the home advisors, a person who is the co-ordinator (or middle manager) of the home advisors. He explains that a geographical division of his professional group is *impossible* because the workload related to the supported housing facilities in different regions varies significantly from week to week. For this reason all the home advisors meet twice a week at the moment to distribute the advisors *across* the regions.

In this exchange the caseworker performs the home advisors as an *interest group*. She states that they will be against the geographical division without giving any further reasons. The home advisor however performs their resistance as a matter of facts. He presents a set of practical reasons that makes a geographical division of their work impossible. Through this argument I suggest that the home advisor performs himself as one of the '*civil servants*' that should inform the manager's decision. Simultaneously, he tries to escape being performed as an interest group, which would effectively detach him from the world of facts and decisions that is constructed by the manager and the civil servants.

> The turn has now come to the fourth group. The co-ordinating home advisor, who is in this group, proposes a completely different division of the team. The professional groups should work by themselves, but each group should elect a co-ordinator who can work closely with the other co-ordinators and with the team manager. Furthermore there should be a team meeting every month.

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[13] Latour (1999) expands the traditional linguistic meaning of articulation to include any process in which something is represented through a connection to something else (e.g. gestures, papers, settings, instruments, sites, trials). (p.142). I use the term articulation in this expanded sense.

> The chief consultant asks if group 4 believes this division is user-oriented or service-oriented. (The former would be in accordance with the official goals of the team project, whereas the latter is the jargon term for the former structure). The home advisor answers that he takes their proposal to be user-oriented. The consultant goes on to ask how co-ordination with respect to the users will take place. The home advisor answers that there will be co-ordination "in the house". Finally, the consultant asks if there are any drawbacks to their proposal. The home advisor replies: "possibly". The consultant remarks: "But you didn't come up with any!" The home advisor doesn't answer.

The home advisor has now presented a proposal, in which the professional groups are clearly the core element. But this is challenged by the consultant. First, he first tries to construct a contradiction between the proposal and the official goal of the team project. The home advisor denies such a contradiction. The consultant then presses the home advisor to state some drawbacks of the proposal. The home advisor fails or refuses to do that. This exchange might be seen as a type of test constructed by the consultant. If the home advisor wants to be taken seriously as a 'civil servant', he must be able to state pros *and the cons* in his proposal, so that the decision can be handed over to someone else, i.e. the manager. If, however, the home advisor fails to state the cons, he is not performing his civil servant role properly; he is simply trying to make the decision himself by stating his own opinion, as any interest group would do.

> The meeting continues with presentations by the fifth and the sixth group. They recommend a geographical division for reasons similar to the first three groups.
>
> As the meeting draws to an end, the chief consultant asks the team manager to make a decision about what to do next. She proposes a date for a team meeting at the local centre, and she says that she will make the final decision shortly after this meeting. One of the caseworkers suggests that each of the professional groups write a proposal to the manager. The chief consultant supports this idea by saying: "yes, the team should have the opportunity to influence the team managers thinking".
>
> The co-ordinating home advisor says that they have a need to tell the rest of the team about their organisation, its background, and why it is

functioning very well[14]. The caseworker suggests that he just write about that in his proposal to the manager. "I don't have to spend my time on that. This is not the time for mutual education". However, another caseworker supports the idea, and the manager determines an additional meeting time where each professional group gets half an hour to make a presentation of their work to the others. With these agreements the meeting ends.

In this part, the process of making a decision is performed in two different ways. The manager, the consultant and one of the caseworkers suggest that the manager makes the decision, and that the professional groups give her (written) advice. In this version, the *manager* is the decision-maker and the social workers are cast in the role of civil servants offering advice or suggestions.

The home advisor, on the other hand, asks for another team meeting where he can present information about his professional group to the entire team. He performs the *team* as the decision-maker. He is thus returning to the performance of the team, which was done by the consultants at the beginning of the day, but which was somehow pushed aside during the efforts to articulate the options and inform the manager.

Performances in Case 2

In the first team training session, I suggest that there are three different performances of decision making. I will call these agora, informed management, and expert-dialogue.

Agora. Initially, 'a team of individuals' is performed as the decision-making subject. This performance entails the positioning of furniture, bodies and a meeting space in ways that produces co-presence and co-visibility of a large number of individuals: an agora. It entails individuals who are legitimate members of this forum, individuals who are capable of speaking, individuals who are civil to each other, individuals who are obliged to participate, and individuals who are momentarily disentangled from other obligations. Furthermore, this performance entails acts such as deciding how to proceed and stating principles for 'subcommittees'.

Informed management. When the team breaks up into groups, a distinctly different version of decision-making is performed. Now a manager supported

[14] Home advisors and support persons are newcomers to local centres. Their new physical and organisational placement has taken place in connection with the team project.

by ‘civil servants’ is performed as the decision making subject. This entails the articulation of options and the gathering of advantages and disadvantages to these options. This articulation work does not require co-presence, it can be distributed over time; the preparation of the manager’s decision can proceed even though only a few team members are present, and subsequent information can be given to the manager in the form a written proposals. This performance of managerial decision-making is one that portrays itself as rational and concerned with the facts. ‘Others’, that is people who do not contribute ‘facts’ or proper ‘factual’ accounts of their opinions, are depicted as interest groups that should be kept at some distance from the decision.

Expert-dialogue. The third version of decision-making emerges in the talk of the home advisor. This performs decision making as a process in which established areas of expertise are brought into dialogue. The argument is something like this: It would be irresponsible to build a house without consulting expertise on fire regulations, electricity and piling. And likewise, you should never make a team decision without serious consideration of the knowledge of the home advisors and the other established professional groups. The notion of areas of expertise implies that representatives of different areas can be elected to speak behalf of these knowledge domains. So decision-making can proceed without the co-presence of the entire team. But, contrary to the managerial version, this version does not accept that ‘facts’ can simply be handed over to a manager, verbally or in writing. The expert representative must participate all the way, and he should ideally retain a right to veto.

So here we have three different performances of decision-making including different subjects, artefacts, acts, and moral ideas about due process. The question is now, what can be said about their relations. In the first case discussed in this chapter (about opening hours) a number of different performances were enrolled in a clash, but then they backed off. The present case, I suggest, is less like boxing and more like wrestling; a number of different actor get entangled in such a way that letting go is difficult.

The issue of dividing the team is introduced as a matter of great importance. As I described, heavy investments of time and expertise are made to create an empty space charged with opportunities along with an agora-like performance of the individual social workers as participants and stakeholders in the decision in prospect. At this point, the balance of forces between doing nothing and doing something is already heavily tilted towards the latter. In the next part of the session, the social workers work in groups and decision-making is now performed according to a seemingly well-rehearsed repertoire of informed management (at least in the group, which I followed). This

performance creates visible tension with at least one home advisor who at different times strives to become accepted as a 'rational civil servant', proposes decision-making as an expert-dialogue, and asks for another agora-session. The combined effect of this is that options have been articulated, and that a number of partially conflicting performances of decision-making have been evoked. None of these 'programs' can easily back off from the issue, because that would leave the scene to the others. The manager's clear statement, that she will be ready to make her decision shortly after a second meeting, drives the proponents of expert-dialogue to seek influence before it is too late. And this in turn drives proponents of the agora-performance to call for more team meetings, so that everything doesn't happen behind closed doors. The performances have thus been articulated and related to each other in such a way that it is hard *not* to continue struggling with the issue of dividing the team. The issue has been turned into a hot conflict!

Case 3. The Working Group

"A *network* is a series of elements with
well defined relations between them."
Mol & Law (1994, p.649)

In case 2 I traced how different options and different versions of due process were articulated and juxtaposed in a way that produced a hot conflict. In the following, I will describe how this oppositional pattern was changed into one that produced a solution to the issue of how to subdivide the team.

At the end of the first team training session, it was agreed that each professional group should submit a written proposal about grouping to the manager. These proposals were to be discussed at a meeting for the entire team at the local centre.

If the team training session is taken as the point of comparison, then it is unsurprising that the written proposal from the home advisors and the support persons was a target group division. This type of division would entail one group specialising in mentally ill clients, and thus all the home advisors and all the support persons would go into this group. The paper from the caseworkers was more of a surprise. On the day of the team training most of them spoke in favour of a geographical division, but their written proposal consisted of a short list of advantages and longer list of problems for each of the two types of division.

Finally, the paper from the home-helpers didn't relate to the grouping at all. Instead it stated a number of unsolved problems with respect to weekend shifts. Furthermore it listed a number of wishes for more resources, time and facilities.

Respectively, the messages from the three groups seemed to be:

"We can only accept a grouping that allows our professional group to remain united"

"There will be serious problems, no matter what we do"

"Other things than grouping are on the agenda"

Faced with these rather uneven performances - that certainly did not add up do the performance of a decision - the manager made two moves. First she declared that she would not accept that all the home advisors and all the

support persons go into one group. “The professional groups must be mixed!” That, she said, is what is “dinned into my ears” at the meetings with the consulting firm, and that is what the official project goals demand.

Second, she appointed a small working group to continue the preparation of the grouping. The working group consisted of seven people: The team manager, a former middle manager[15], the co-ordinating[16] home advisor, the co-ordinating home-helper, a senior caseworker, a senior support person and a housing advisor[17].

Drawing on the analysis of case 2 it is fairly easy to explain why such a working group is a workable way to proceed. Apparently, it satisfies all three versions of due process. It informs the manager, it stages a dialogue between representatives of the established areas of expertise, and finally it promises to return to the agora to have its results agreed to.

In the following I will look closely into three working group meetings that were held shortly after each other, in fact on a Monday, Tuesday and Thursday in the same week. To me the effect of these meetings was astonishing. Within this short period, the group moved from the uneven performances, sketched above, to the construction of an elaborate solution to the problem of how to divide the team. I will investigate this rapid process by once again paying close attention to the different performances and how they get related.

Waiting for the Figures

> I arrive at the local centre Monday morning at 8:30 AM. The middle manager, the support person and the caseworker are already there. They are sitting in conference room designed for about 40 people. Three tables have been shoved together in the end closest to the entrance, thus making a working table for the group. They are waiting for the team manager.
>
> I take the opportunity to ask what happened at a particular meeting last week, a meeting that I had missed. The (former) middle manager tells me

[15] Middle managers had their charge taken away as a part of the team project. As a part of the agreement with the trade unions none of the middle managers were fired and their pay remained the same. But they were told to keep a low profile in the team process, and their specific tasks in the new structure were largely undefined.

[16] Social workers in positions designated ’co-ordinating’ are in effect middle managers in charge of one particular professional group. Two groups - the caseworkers and the support persons - have no co-ordinator.

[17] The housing advisor is a type of professional, which I have not mentioned before. There is only one housing advisor in the team, and he is usually considered a one-man-professional-group because he works rather independently of the others.

> they all were very frustrated that the grouping has to take place right now. "We discovered that geographical grouping will result in work every weekend for the home advisors, and target grouping will result in work every weekend for the home-helpers". Furthermore, the middle manager tells me, the team manager had arrived in the middle of this discussion. She had declared that they must work across professional demarcations. "That paralysed us completely".

The middle manager's story performs a kind of *paralysis* that resonates with the written proposal from the caseworkers. No matter which type of grouping is chosen there will be intractable problems. The suggestion seems to be that no action is possible, unless there are changes in external conditions, such as the workload, the allocated staff resources, or the goals of the team project. However, the performance of paralysis is changed in the very next moment.

> The team manager arrives. She starts by asking the middle manager to distribute a summary she (the middle manager) has made of the pages concerning the adult teams in the official project plan of the team project. This done, the manager explains to the others that she has talked with the middle manager about how to proceed.
>
> The middle manager continues by telling that she has contacted the central offices to get some figures. The figures on the supplementary benefit cases have arrived, and the ones on early retirement will be here today. "I have got a list of street names from the home-helpers, and I have added the number of supplementary benefit cases in each street". She passes out another set of photocopies. The paper lists all the street names in the region of the local centre and next to each street the number of supplementary benefit cases is added in the middle managers handwriting (figure A below). The caseworker remarks: "this is kind of fun – we have never done this before". The middle manager replies: "yeah, it is fun isn't it – and the early retirement cases are probably heaped up in the same way".

In the above sequence the performance of paralysis seems wiped away by a sudden burst of activity. Prompted by the manager, the middle manager presents an array of materials (as we shall see later, these are all materials for constructing a geographical division): A summary of the project plan, a list of street names and figures on the distribution of cases. Through this, the group

is performed as a *centre of calculation*[18], a location in which diverse materials are drawn together. The long project plan from the Board is translated into a two-page summary. The region of the local centre is rendered manageable by the home-helpers' one page alphabetical list of street names. And for the first time, some information on the physical distribution of clients is available through the juxtapositioning of street names and client addresses.

In the earlier performance of 'paralysis', the working group seemed dependent on the mobility of external conditions, and immobile in itself. Now, the group itself seems to be the locus of mobility, in that it actively draws information from its comparatively passive surroundings.

> In the next part of the meeting, the group talks about the number of cases in the adult team. There are about 1025 on supplementary benefits and perhaps around 1400 on early retirement. Since the team was formed as in organisational unit three months ago, it has received 200 new cases. When the teams in the local centre were demarcated, the caseworkers were relieved of a number of cases. But all of those cases were 'easy', whereas the cases received now are very hard. The caseworker tells the group about a particular case that the service team tried to pass on to the adult team. It was a young, foreign woman who got divorced and had some existential problems. But nothing 'mental' and nothing related to substance abuse. The caseworker declares that the woman in question obviously didn't belong to the adult team. The rest of the working group agrees. They go on to talk about some very bothersome calculations of heating benefits. This tedious task is with the adult team at the moment, but all team managers (and the official project plan) clearly acknowledge that it has to move to the service team. It just hasn't been done yet.

In the above snippet the demarcation in relation to other teams is performed. I will call this performance *labour of division*. The team is performed as a unit that the manager and the social workers cheer for together. The relation to the other teams is performed as a battle over getting rid of hard cases and annoying tasks. This battle takes a number of different forms. It can be large battles such as the whole business of heating benefits, or it can be smaller but potentially strategic "case-shoving" battles such as the case of the divorced woman.

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[18] Cf. Latour (1987, chap. 6).

It is interesting to compare the 'labour of division' performance with the performances of 'paralysis' and 'centre of calculation'. The 'centre of calculation' comes across as a potent and energetic of movement toward the division of the team, whereas the 'paralysis' obviously has the emotional tone of giving up, frustration, and lack of movement toward the decision. The labour of division falls somewhere in between these. On the one hand there is talk about waiting for others (external to the team), who has to take over some of the workload. On the other hand there is talk about actively rejecting cases and making demands to the other teams. In the next section, the performances start to get related.

> The manager says something like this: There is a problem in relation to grouping. It is a obstacle that we work with more clients, than we should. What we must do is to pretend that we have as few clients as we actually should have. Of course this is a problem because the reality is different. But then we must make a list of what should be moved to the Service Team and elsewhere. I will discuss the problem with the other team managers, and ask how we are supposed to live up to the intentions of being a team that delivers treatment. We must try to *pretend* that the necessary conditions are there, and we must make demands on the Service Team when they try to make us take over.

In this statement the manager engages in a performance that Law (1994) has termed *vision*. Law describes this as form of authority in which power and ordering is derived from access to a reality and a vision that transcends the mundane. In this case the extra-mundane reality is the secluded group of team managers who may divide the labour in such a way that the promise of sufficient resources is redeemed. The manager offers to share a bit of her access by taking a 'list' of problems with her. Evoking the intermediary[19] of the list is a way to enrol the social workers in the performance of vision. Their specific role is to 'pretend' while the manager negotiates with the other managers. This enrolment is clearly at odds with the pessimistic versions of the labour of division. The manager urges the social workers to stop the pessimistic talk about the caseload, which tends to slide them into paralysis. Instead they should put the problems on a list, give them to the manager and let it go. In that sense the manager's performance of vision entails a *detachment* of the social workers from their immediate problems. The clearly

[19] The term intermediaries is used in ANT to designate any kind of entity that circulates between the actors in a network (e.g. Callon, 1998, p.256-257).

stated purpose of this detachment is of course to create an opportunity for the social workers to engage in the grouping decision. So the vision colludes with the performance of 'centre of calculation' and it works to defer the performances of 'labour of division' (in the passive version) and 'paralysis'.

The tension between performances becomes even more pronounced a little later in the meeting:

> The meeting, that I missed last week, was apparently also missed by the caseworker. She asks the team manager what she actually said at this meeting that made people so paralysed.
>
> *(Dialogue reconstructed from field notes[20]:)*
>
> Manager: I was provoked by the co-ordinating home-helper who constantly went into details. We must clear away the obstacles for thinking. If we could make some groups, it would be fantastic. Each of them could plan their work according to the target group. But that presupposes that we get rid of those damn administrative tasks. I really mean that. I don't see why that should provoke people.
>
> Caseworker: The problem is not evening work, it is the professional demarcations. "I don't want to vacuum if two home-helpers are ill".
>
> Support person: And it is even worse in the case of care. I don't know anything about lifting techniques – there *are* professional demarcations.
>
> Caseworker: And we also have *our* professional pride. I will not accept that a home-helper advises the clients about rehabilitation or flex-jobs.
>
> Manager: You are pushing it to extremes. Everybody will retain his or her core area, but there must be some flexibility. The group must jointly manage the work outside the core areas.
>
> Caseworker: yeah, we talked about that – and it would be fine with us to visit clients with the home advisors or the home-helpers. We'd like to get away from our desks.

[20] The dialogues in this chapter are all reconstructed from my field notes. Statements in quotation marks are English translations of formulations that I noted word by word. The other statements are reconstructions based on key words, which I jotted down every time someone said something. The accuracy of these statements are thus at the level of "..or words to that effect". On the whole, I do not claim that the empirical snippets are accurate on the word to work level. But I do claim that they constitute a plausible reconstruction of the discussions and actions in the adult team, which is sufficiently 'thick' to analyse the broad patterns of performance.

Manager: "That's the secret of it. It must be possible to make some exciting social work in this team".

(The manager continues talking about the idea of making intervention plans in all the new cases)

Manager: ... doesn't that sound exciting?

Caseworker: At the moment, we are struggling with three interviews a day. "When you are done with that, you are beat". But we *are trying* to make some intervention plans.

In this part it becomes clear that the manager's attempt at clearing away 'the obstacles for thinking' does not stop the social workers from performing labour of division. (This time division between the professional groups within the team). The two performances seem to *oscillate*; Every time the problems crop up and paralysis seems imminent, vision is evoked. And every time the vision is about to dominate the picture, someone calls attention to practical problems. So in contrast to the team training session, it seems hard for the manager to keep the grouping decision on the agenda. It seems to be pushed aside all the time.

Figuring it out

At the first working group meeting three people were absent[21]. At the second meeting - the one I will analyse in this section - all the members attended. So the total list of participants was this: Manager, middle manager, support person, caseworker, home-helper, home advisor and housing advisor. At the first part of the meeting, the performances oscillate the way I have described above.

The manager talks about the need to try to move on. Some of the social workers talk about the staff that has left another team. The home-helper says that the geographical grouping should take their 'road time' into consideration, because it comes out as non-productive time in the computer system. Responding to this the manager tells her that 'the practicalities' will have to go in order to make it possible to think. The home-helper answers: In that case, I think the staff will leave. The manager says that the task of the working group would be made impossible if everybody argued in that way.

[21] The co-ordinating home-helper, the co-ordinating home advisor and the housing advisor.

And so it continues. More worries are brought up, and the manager repeats her idea about making a list and taking it to the management team. But then something happens.

The manager says that the figures from yesterday (the first meeting) might suggest a division. She is referring the to the middle manager's paper combining street names and number of clients on supplementary benefits (fig. A).

The caseworker asks, "Are you asking if someone has a map in their head?"

By this question, she queries if someone knows the local geography well enough to imagine a set of regions that would divide the clients evenly. Obviously, an extremely difficult task because the paper in question is an alphabetical listing of more than one hundred street names (fig. A)

The middle manager replies to this by handing out photocopies of a list of street names (fig. B) and a corollary map (fig. C). She explains that she has received this material from the health visitors in one of the other teams in the local centre. What makes this material interesting is that it divides the area of the local centre into three regions, and gives an alphabetical listing of the streets in each region. So now the group has the number of supplementary benefit clients linked to street names (A) and street names linked to regions (B+C).

The home-helpers' list

A-street **35**
B-street **2**
C-street **7**
D-street **14**
.
.
.
.

Figures added by the middle manager

Figure A

The health visitors' list

Region I	Region II	Region III
B-street	A-street	D-street
C-street	G-street	F-street
E-street	J-street	H-street
.	.	.
	.	.

Figure B

The health visitors' map

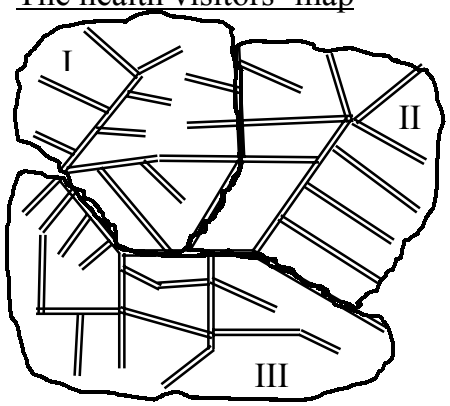

Figure C

The manager asks if the figures (A) can be transferred to the regions (B).

The home-helper says, "I can divide mine into regions. That'll take 20 minutes"

She leaves the conference room, and goes to her office to figure out the regional distribution of the 140 home help clients.

The middle manager, the housing advisor, caseworker and the support person start moving figures from A to B. They work in pairs; one person stating the number of clients in a street (reading from A). The other person is writing the number next to a street name in B. The manager sits between the two pairs and watches them work. The work seems easy and they all work energetically. "This is actually very enjoyable", the caseworker exclaims.

In this snippet the oscillation seems to have stopped and the scene is dominated by the performance of *calculation*. The sudden focusing is related to the entrance of lists and maps. With these, the manager and the middle manager are able to define a puzzle[22] that can be solved by the team: The transfer of figures to regions. The group members accept this challenge, and for quite a while they work intensively on the task. But why is this task so interesting and fun for the social workers? Imagine that you have been working in the local centre for several years. You have seen hundreds and hundreds of clients. You know that certain estates are 'heavy', but besides from that you have no clear picture of the distribution of clients. Now imagine that the pieces to this puzzle are suddenly in front of you and that you can figure the distribution out in just 20 minutes. And more over you will be the first to know. No one has figured this out before. In an almost literal sense, this task is attractive.

The thrill of discovery, the thrill of an elegant series of calculations, the thrill of creating a potent new form of visibility. All these desires are part and parcel of the performance of a *centre of calculation*. This performance is made possible by drawing together inscriptions from a number of networks[23]: The printout from the database in the central offices, the map and the regional listing of street names from the health visitors. But this is only the surface of it. The inscriptions can be traced to an ever-expanding series of networks. One example is that the database of client addresses draws on the huge network of administrators, procedures and artefacts that have kept track of every single client over the years[24]. So the thrill and potency of puzzle-solving is derived from the long networks it draws together. And the social workers seem to enjoy playing their parts in this performance of a centre of calculation.

Well, not *all* the social workers. The very attentive reader might have noticed that the home advisor has slipped out of the story.

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[22] The metaphor of puzzle-solving is borrowed from Kuhn's depiction of science as creative craft work that attempts to solve the problems, which are posed by a particular paradigm. The definition of a puzzle enables disciplined work within a fixed ontological frame. For a similar use of Kuhn's metaphor see Law & Moser (1999). For a discussion of framing see Callon (1998).

[23] The theme of creating centres of calculation by drawing together literary inscriptions has been thoroughly discussed by Bruno Latour (1987; 1990).

[24] The network that links clients and addresses has a very long history in social work. Thus, in the beginning of the 1900's, the last three addresses of a client was used as a the vehicle for settling the distribution of costs between municipalities. (Christensen, 1998)

While the home-helper leaves, and the others work with the numbers, the home advisor sits passively on his chair. He looks puzzled and a bit worried. He addresses me: "We are building a chimney, but we don't know where the house is going to be".

I play my self-assigned role of interested listener but reluctant contributor.

The home advisor goes on to address the manager: "I don't quite understand what they are doing".

The manager gives a very straightforward explanation of how the numbers are transferred.

Home advisor: I fear that we are building a chimney – I find it hard not to look at the practical matters.

Manager: it *is* hard, but we will return to the practicalities – we all have something that restricts us – we must get that out of the way.

Home advisor: as long as we don't have to start before the foundations have been built. If you will promise me that!

Manager: don't worry, this is not practical yet.

The home advisor goes on to explain that today two of the clients had to go to a civil court, and for that reason the schedule of all the home advisors had to be reshuffled. He is afraid that such practical solutions will not be possible with geographical grouping.

The manager explains that the large team must divide into groups, and these groups must find their target groups and figure out how to work. But before they can do that, some of the administrative burdens will have to go.

The home advisor asks if he can still meet with his professional group and if they can still cover for each other regardless of the geographical grouping.

The manager approves this, but adds that the home advisors shouldn't meet quite as often as today.

The first thing I would like to point out is that the calculation performance and the above conversation take place *simultaneously*. The home advisor is talking to the manager *while* the others are calculating. This entails an entirely new relation between performances. In earlier parts of the meeting worries and visions oscillated and, as it were, interrupted each other. In the snippet above the calculation moves forward *regardless* of the worries voiced by the

home advisor. This detachment and *parallel* ordering of performances resonates with the manager's earlier suggestion about writing a list of problems to the other managers. That was also a way of separating problems from 'progress'.

We might imagine the outcome of an oscillating vision-worries process to be mutual exhaustion or perhaps some kind of compromise. But what kind of object would be produced by parallel performances? I suggest that something strange will be found if we pay close attention to the talk about grouping. The manager says that each geographical group must find its target group (that is each geographical group should discover a particularly important social problem within its region and focus on that). So now geography and target groups are no longer performed as alternative options. Instead the one seems to be *implicated* in the other. A quick look around the organisational structure suggests that this has happened before. The adult team (a target group) is part of the local centre in region X (a geographical group), which is a part of the Family and Labour Market Administration (a target group), which is a part of the city of Copenhagen (a geographical group). So one could imagine a history of exhausting debates between alternatives, break-ups into parallel performances, and differences reappearing as implications rather than alternatives. But of course all this is just speculation.

Let me go back to the working group meeting and point out another case of implication. The manager accepts that the home advisors continue their meetings and work-planning across the geographical boundaries. They just shouldn't do it 'quite as often'. By this, the manager performs the professional and the geographical groups as mutually included. Home advisors can be performed as something 'in' a geographical group, and geographical groups can be performed as something 'in' the group of home advisors.

> "*Done!*" The middle manager announces that all the figures have been transferred to the regions and added up. The numbers of clients in the regions are 319 – 431 – 255.
>
> The group looks at these figures for a while and decides that they are too uneven. At this point a new puzzle is created. If the borders between two regions are moved on the map (C), then corollary movement of clients can be figured out by reading the street names on the map and finding the client number related in these streets on figure B. So now the working group engages in moving borders, calculating the adjusted client number and evaluating if the resulting regions are sufficiently even. This time the home advisor contributes with suggestions, and he keeps an eye on the

even distribution of supported housing[25] as the borders are redrawn. Even the observer - who normally takes pains to avoid involvement in 'political games' - thinks of this moment as purely technical and finds himself making suggestions to the solution of this exciting puzzle.

And the puzzle does more or less work out. 319 – 381 – 305 seems to be a reasonably even distribution of the clients on supplementary benefits[26]. The home advisor and the support person also report a fairly even distribution of their clients. Furthermore the home-helper has returned and the distribution of her clients on the three regions turns out to be 56-43-39. Also reasonably even[27]. Everybody seems to be in a good mood. The manager ends the meeting by saying "Thank you so much for today!"

At the end of this meeting everybody takes part in the enjoyable performance of a centre of calculation. Within less than two hours this peculiar calculation performance has significantly changed its relation to other performances: First it appeared in a mosaic with other performances, second it formed an alliance with vision, third it existed in parallel with worries, and finally it dominated the scene.

Accounting for the Figures

At the beginning of the third meeting the middle manager hands out fresh copies of the map stapled together with three spreadsheets displaying street names, professional groups, and number of clients for each geographical group. She has received the figures with respect to clients on early retirement (2034 cases), and these have been added to the supplementary benefit cases that are also managed by the caseworkers.

The middle manager accounts for a number of provisos in relation to the figures. "There are 289 cases that have to be moved to the handicap team". "There are 57 cases that are not completed, or something like that. At any rate they are not registered with an address in our area in the national register". "There are 94 who are dead or in other municipalities".

She concludes by saying that it looks "incredibly good". The geographical division that was based on the supplementary benefit cases also turned out to produce a reasonably even distribution of all the other types of cases.

[25] The home advisors are responsible for the supported housing.
[26] Maximum deviation from the mean is ≤ 5%, TEJ
[27] Maximum deviation from the mean is ≤ 7%, TEJ

In this part the middle manager performs the geographical division as an *order*, something that looks incredibly good. This entails *boundary work*: the identification of cases that actually don't count and really shouldn't be here. Rather monstrous categories are created for these others: 'Not completed or something like that', 'Dead or in other municipalities'. So the division is not a stable self-reliant construction. It demands work. And there is more work to be done and more others to be created:

> The caseworker comments that the differences in the home-helpers' figures are rather big (56-43-39).
>
> The home-helper agrees.
>
> The middle manager says that that is probably only important in relation to distribution of staff between the groups. We shouldn't have to move the borders.
>
> The home-helper replies: But they (her colleagues) don't want to cross the border, they want to stay in the southern area.
>
> (Because of unfinished labour of division with another team, the home-helpers have only been working in the southern half of the area for the past four months).
>
> The manager: That is not for them to decide!
>
> The home-helper: They cannot comprehend that they are all together *and* that each of them is in a geographical group. I am knocking it into their heads. They still have to take weekend shifts, and to work across the borders. The next thing they trotted out was that they would have to part with clients - that is a major problem!
>
> The rest of the group agrees that parting with clients is a problem and the manager assures that it will only happen gradually and with proper notice.

In this snippet the home-helpers are performed as *other* to the geographical division. First, their client distribution isn't quite as neat as for the other professional groups. But this will not lead to a change of the regions. So in other words, regions should move the home-helpers, not the other way around. Second the home-helpers allegedly don't want to cross the border, but this reluctance is strongly rejected by the manager. Third the home-helpers

don't seem to grasp the idea of the geographical grouping, but this is knocked into their heads by the co-ordinating home-helper.

In all the three instances, the geographical division is untouched, while *rough boundary work*, if not boundary violence, is directed at the home-helpers to make them conform. Only in the last part of the snippet is a more lenient approach applied. The sensitive issue of parting with clients is handled by a sort of *deferral*: the shift to geographical grouping will be gradual.

> Later in the meeting there is more talk about the problems that might come up when the geographical division is presented to the rest of the team. The caseworkers will worry that they will have to span two specialities (supplementary benefits *and* early retirement), whereas no one works with more than one speciality today.
>
> Second, the caseworkers will worry about the future of the reception desk. At the moment one caseworker is the anchor of this. She is very recognised for effective handling of a large number of simple cases, thus leaving more room for the other caseworkers to deal with the hard cases. The future of this arrangement is uncertain with geographical groups.
>
> Third, it might be hard to find caseworkers who are "motivated" to work in one particular region, where there is a very high percentage of foreigners.
>
> Finally, The home advisors have a more general worry that a lot of experience will be "thrown away" in a new structure.
>
> None of these problems are solved at the meeting. The manager restates from time to time that they have to move on, that the grouping is a trial, and the problems must be listed and solved in the team or carried to the management team.

In this part the division is performed as an *established disorder*[28]. The geographical grouping will entail a certain amount of mess, and this mess will be managed along the way rather than solved beforehand. This *pragmatic boundary work* uses deferral, patience and doggedness rather than the head-on approaches of the rough boundary work. And quite obviously the performance of pragmatics and disorder is very different from the earlier performance of the division as an order that looks 'incredibly good'.

---

[28] Phrase borrowed from Haraway

Towards the end of the meeting, there is a discussion about how to account for the division at the coming meeting with the rest of the team.

Middle manager: We have to explain why we chose the geographical division.

Caseworker: I was asked why only *one* model? – I actually don't know

Middle manager: But I guess they expect one model.

Caseworker: But what are the reasons?

Home advisor: We were asked to work with two models – we have to state the reasons for ending up with one.

Manager: We *have* worked with two proposals, but we have settled on geography rather than target groups.

The manager's comment ends the discussion at this point, but the issue comes up a little later:

Caseworker: Why did we evade the target group model?

Manager: What I heard was that the geographical model was most appropriate – it distributes the clients. We didn't go deep into the idea of target groups.

Home advisor: There was a lot to be said against it

Housing advisor: It would give an almost 100% specialisation. It would be difficult because of the clients that fit into several target groups (e.g. alcoholics and mentally ill)

Manager: So the argument was that it would be difficult to stigmatise people by assigning them to a particular target group.

Middle manager: Yes, geography is very friendly to the users.

Manager: So we tried to think about what target groups might mean, but there were too many objections for us to go into it.

In the discussion above the working group rationalises the outcome of their work. The geographical grouping is performed as a *decision* – an informed choice between two options. In the minimum version the performance of a

decision entails either (a) the evocation of advantages to the preferred option or (b) the evocation of disadvantages to the evaded option. In the present case (a) and (b) are not equal. The earlier performance of the geographical grouping as a disorder makes it difficult to evoke the unchallenged advantage needed for the (a) version of a decision. For that reason the group has some difficulties in performing a decision the way their colleagues expect them to. But by focusing on an intractable problem connected to the target group model they manage to construct an account of their work that performs the (b) version of a decision.

Performances in Case 3

Three meetings in the working group - Monday, Tuesday, Thursday - and all of a sudden the team process has made a big leap forward. Groups have been defined, Maps have been drawn, client distributions have been calculated, and a decision is ready to be presented to the colleagues.

This event is all the more remarkable given the visible tensions between different performances of proper decision-making at the team training session, and given the written proposals from the professional groups, which certainly didn't indicate a common solution either.

The working group, however, seemed to be a way to proceed. The manager would be informed, the experts would be invited into a dialogue, and the entire team would have an opportunity to discuss the matters at a later time.

In my analysis of the working group, I have distinguished the performance of calculation as the key event. It attracted the manager because it was a good ally to 'vision' and strong opponent to 'paralysis'. It attracted the social workers because it entailed the challenging fun of puzzle-solving, the power of drawing together long networks and the potency of a new form of vision.

Furthermore, the ability of calculation to move on in parallel, i.e. work uninterrupted by worries made it seem unstoppable. And then, we might speculate, the social workers were even more compelled to jump on the bandwagon to get some influence. When the calculation performance produced an object, the social workers were so engaged in their product that they continued the boundary work and the accountability work necessary to sustain 'the solution'.

The peculiar thing, in this rapidly forward moving story, is how the performance of calculation manages to achieve 'independence' and proceed in spite of all worries and practical restrains. I believe this 'independence' can be explained by particular kinds of work which disentangles calculation from the rest. *First*, the formation of the working group makes a temporary distance

between this group and the team, as well as a temporary distance between the professional groups and their representatives. *Second*, the manager's performance of vision works to detach the present work from the immediate concern about resources and workload. Through this performance, the group members are encouraged to 'pretend' that the necessary conditions are present. *Third*, the very idea of doing a calculation 'on paper' is a way to defer full accountability. Only later will it be accounted for to the rest of the team. Only if the team shares the responsibility, will the solution become a real decision. Only if nothing stops it, will it gradually in the future be put into practice.

The construction of a network that establishes a new set of regional boundaries is thus achieved through a series of disentanglement moves. These moves bracket the relation between the new order and various other actors and performances in the local centre. But the sequestration of the group and the neat order of the solution are only temporary. At the last meeting in the working group, the solution is gradually related to its potential others. First, the working group performs the geographical division as an 'order' which others will have to confirm to. But later the solution is performed as an established disorder, which will have to manage its others along the way. The pressing question is of course, to what extent the entities, which have been tied into the geographical solution, will remain in place? Will the network hang together or will it fall apart?

Case 4. Working in Geographical Groups

"Like guerrilla armies, fluids melt back into the night.
They circumvent. They infiltrate"
Mol & Law (p.662)

In case 2, I described the entanglement of different performances over the issue of grouping. In case 3, I analysed how this messy and potentially blocking situation was changed through a number of disentanglement moves allowing a performance of calculation, which resulted in an orderly geographical division. In this section I will follow the further movement of this geographical division through a series of events.

First, there is the filling out of the so-called Team Profile®, a questionnaire designed by the consulting firm. Second there are two more days of team training. Third, there are meetings in the newly designed geographical groups, and fourth there is a final team training session.

In the course of these events, allies of the geographical division are gradually taken over and used by the social workers to perform a reality of professional groups. In this way, the geographical grouping is partly chipped away by the very 'order' that it was intended to replace.

Before I tell this story, thoroughly and chronologically, I need to mention two events which consolidated the network of the geographical solution after its initial construction in the working group. First, the 'solution' was presented as a proposal at a team meeting and approved without objections. Second, the working group reconvened and solved the puzzle of distributing the social workers evenly among the three geographical groups. 'Names' were thus added to the network of the geographical solution. This assignment of individual social workers to geographical groups 'on paper' was one of the conditions of possibility for the next event that I will describe.

Drawing the Team Profile®

On a late and warm afternoon in August, the team was summoned to another building owned by the city of Copenhagen, just down the road from the local centre. The purpose of this was to fill out a so-called Team Profile® - an extensive questionnaire developed by the consulting firm.

As the social workers entered a spacious attic room, they were seated at groups of tables. Each person was given a pen and a questionnaire. The

consultants made sure that the first page stating the team (adult team) and the subgroup (I, II or III) was filled out correctly. Then the consultant explained that 'the team' referred to in the questionnaire is the whole team – not the professional groups and not the geographical groups. After this everybody worked silently on their own, handed in the questionnaire when they were finished, and left the room one by one.

Following the standard format of psychological tests[29], the Team Profile® is designed to measure a number of dimensions in a particular phenomenon. In this case the phenomenon is the developmental stage of the team. The Team Profile® draws on the theory that a team starts as a potential team then it develops into a pseudo-team and finally it becomes a real team[30]. According to the theory, the development from a potential to a real team is evidenced as growth on a number of dimensions, such as clarity of purpose, the capacity for problem solving, ability to utilise each other, and mutual responsibility between the team members.

These theoretical dimensions of the team development are represented in the test as a number of *scales*. In this case there are 25 scales with names referring to the dimensions: Purpose, Problem solving, Utilisation, Responsibility, etc. Each of these scales/dimensions is assessed by the average response to 10 *statements*. The ten statements on each scale are designed to be essentially identical. If we take the Purpose-scale as an example, the statements read:

- All the members know what the purpose of the team is.
- The purpose of the team is well known among the members
- The overall aim of the team is known among the members
- The direction of the team work is clear to the members
- etc.

In the questionnaire that was presented to the social workers the 10 statements from each of the 25 scales were blended into groups of three. So on the surface of the test the scales are invisible. The respondent has to respond to each statement by ticking one of 6 boxes ranging from "strongly disagree" to

[29] See Anastasi (1990)
[30] This was briefly explained by the consultants at the first team training session.

"strongly agree". And then there is an additional rule: The ticking of the boxes within a group of three statements must all be different. So it is not allowed to give a particular response to more than one statement within a group.

In the chronology of the team project the Team Profile® is a new actor, which from the very start is intimately linked with the geographical division. The first page of the team profile presupposes that the team has been divided into subgroups, and this in turn means that the team profile is lending support to the geographical division by taking it for granted. In addition, the team profile joins the geographical division in the performance of the social workers as detached individuals; the questionnaire is filled out individually, talking to the colleagues is prohibited, and the questionnaire does not ask the test-taker to state his professional group. Moreover, there are several procedural elements of the Team Profile® which helps to perform teamwork as obligatory. The social workers are required by management to participate and hiding or escaping is made difficult; Everybody must go at the same time, so it would be noticed if someone stayed at the local centre. Everybody must hand in the questionnaire to the consultant, so it would be noticed if it wasn't filled out properly. The requirement of using three different answers within a group of statements makes it impossible to 'hide' in the neutral middle category; the individual is thus obliged to make a choice between preferences.

So altogether, the team profile appears to be a strong ally for the team manager and her geographical division; it cuts across professional groups and it makes the social workers participate. However, this alliance becomes problematic in the following.

> About a week after the filling out of the Team Profile®, there were two consecutive days of team training. On the first morning, the social workers were again placed in the 'horseshoe', and the consultants started off by handing out colour-prints of the result from the Team Profile and by presenting these on an overhead projector.

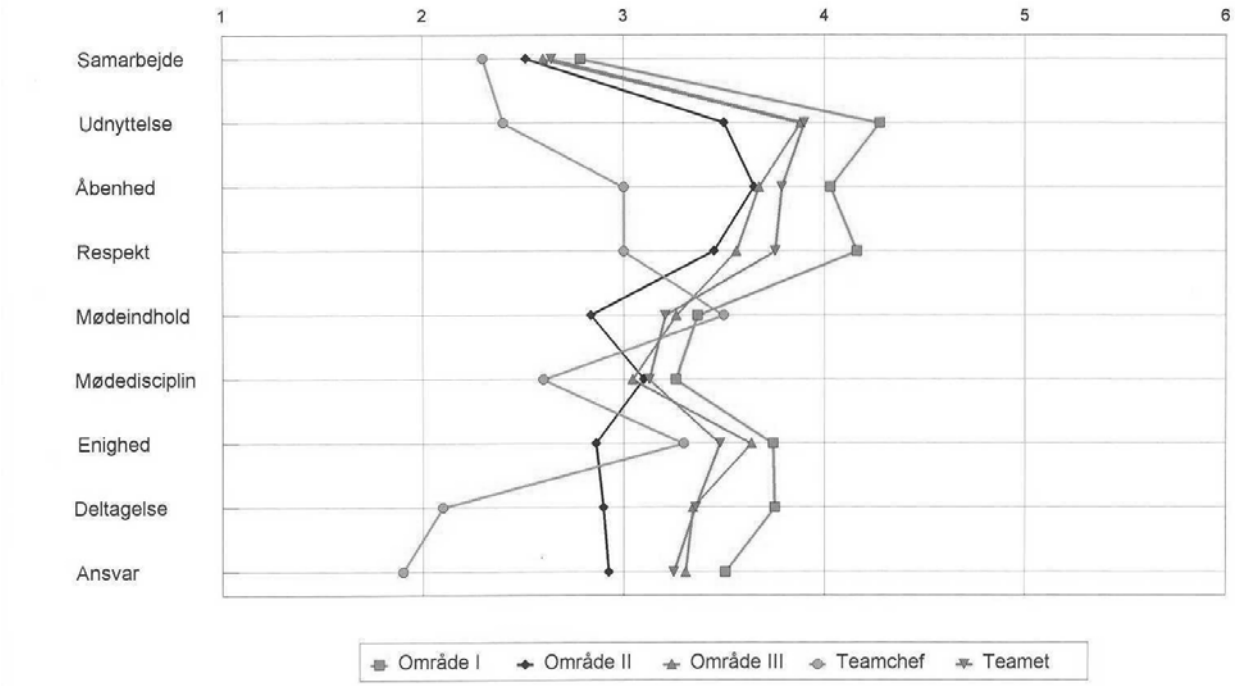

Figure 6. Team profile® scores for three geographical groups and the team manager
The text below the curves reads: Area I, Area II, Area III, Team manager, The team.
The vertical text indicates different scales on the Team Profile®.

> The consultants explained that 3.5 on the scale is the average, so more than this indicates agreement with the statements ("yes, the purpose of the team is clear") and less than this disagreement. Then the consultants went over the figures, talking about values over 3.5 as "good" and "not bad at all", whereas values below were interpreted as "problems" or "needs development". Furthermore the consultants commented that the three groups followed each other "nicely", while the team manager differed. Several times, the differences between the manager and the groups were emphasised. One comment went like this: "Utilisation [a scale] – that looks better, all groups are on the right side of 3.5, but the team manager is in doubt". A little later, the consultant said, "The manager will be given opportunity to justify her viewpoints". A social worker, who sat close to me, leaned over to one of her colleagues and said, "it is really embarrassing"

In this part the team profile becomes a troublesome ally. The manager is unequivocally behind the geographical division, but now the presentation of the team profile scores singles her out as someone, who needs to justify her

viewpoints. In the following, I will take a closer look at the consultant's presentation of scores and the construction of the need for justification.

On the consultant's plates the scores are placed on a scale, which introduces an externally given definition of good and bad. The consultants never explain where this scale comes from, but the standardised appearance of the questionnaire as well as the '®' after its name suggests, that there is a lot behind. In the presentation of scores, the consultants use the scale to claim that a large number of scores, in particular the manager's, indicate problems.

In addition to the placement of scores on a scale, the plates juxtapose the scores from the three groups and the manager. It turns out that the three groups are roughly identical, whereas the manager is different; she typically scores 'worse' on the normative scale. The divergence in scores might be explained in several different ways. One option is to assume that the four parties are describing *different things*. However, it is extremely unlikely that the consultants would interpret the scores in this way. The very idea of a team profile or any other kind of standardised test hinges on the assumption that the test measures something particular 'out there'. And the consultants do in fact talk about team profile as a measurement of *the* team stage.

The second possible interpretation, the one used by the consultants, builds on the assumption that the four different parties all describe the *same thing*. In this interpretation, divergences in the scores must be caused by some disturbance of the description process. In principle, it could be either the three groups or the manager who is disturbed. But only one of these interpretations is reconcilable with the credibility of the consultants. Just as it would be extremely difficult for the consultants to defend a test that doesn't measure a single underlying reality, it would be very hard to defend a test that produced wrong measurements in a majority of the cases. For this reason, there is only one interpretation left; it must the manager that was disturbed, and consequently she must justify her viewpoint. So whereas the team profile previously appeared to be a strong support for the manager in her attempts to establish the geographical division, it now becomes a troublesome ally that questions her ability to see the team 'as it really is'.

Accounting for the Team Profile®

> After the presentation, the consultants asked the social workers to divide into the three geographical groups. The task given to these groups was explain "why the curve is where it is", that is in most cases on or below average. Each group was assigned 8 or 9 scales to account for.

> The group I followed went over the scales one by one. For each scale, the group members suggested a number of different explanations. I will pick out some examples:
>
> In several cases there was talk about the low scores on the Team Profile® being a result of the way in which the test was taken. In the countless statements that referred to "the team", "meetings" or "co-operation" there were several different interpretations of which team[31], which meetings, and co-operation with whom.
>
> However, these critiques were usually only mentioned at the beginning of the discussion of a scale. They quickly gave way to a lot of 'facts' that explained the score. The meeting discipline score is low because the meeting in question was badly organised, because people have negative experiences with not getting sufficient information, and because several people interrupted the meeting by arriving late, and so on.
>
> Quite a number of these corroborating explanations evoked the idea that the team was in the early stage of a *developmental process*; The demarcation of the team is low because boundary work in relation to other teams has not been done yet. The existence of a team method is given a low score because the team hasn't had the opportunity to develop it yet. The attitude toward team co-operation scores low, because no one has very much experience with that yet.
>
> Finally the *professional groups* were referred to as a fact that would explain the low scores. There is no team method, because the professional groups all have different methods. The 'meeting discipline' is disturbed by late arrivals because the meeting times don't fit with the work schedule of some professional groups. 'Team co-operation' will inevitably be difficult, because the professional groups have different approaches and attitudes towards the clients.

In the examples given above, the group casts some doubt on the Team Profile® as an epistemological tool by focusing on different interpretations of the statements on the questionnaire. But the assumption that the team is located on a particular team stage is not questioned. On the contrary, the group lends support to this ontology by supplying detailed explanations colluding with particular dimensions of this ontology such as 'meeting discipline'. However, in the group's account, the team development is placed in a universe that also contains professional groups and externally determined

[31] The entire team or the professional colleagues.

conditions such as lack of time and resources. So the reality of the team stage is juxtaposed with other realities. The group seems to grant that the Team Profile® is more or less true, but they simultaneously perform it as less than the whole truth. This implies that the social workers are not 'blameworthy' if the team stage is low. The team profile as a vehicle for generating moral obligations is thus weakened, which of course also means that some support of the geographical division is chipped away.

> In the following day - the second part of the two days of team training - the manager was called to speak on the basis of her Team Profile scores. With explicit references to the official plan of the team project and another recent report from the central offices, the manager explained her vision of the geographical groups. Each group should investigate which kinds of users and problems there are in their particular region. Based on this, the geographical group should establish cross-professional collaboration including action plans, follow-ups and goals for the users. Furthermore a contact person for every user should be selected. The team manager stressed that flexibility in relation to professional demarcations would be required in this process. Finally, she explained her scores on the Team Profile by saying that she had had the whole team in mind, not the professional groups.

In this statement the geographical groups are performed as *functional in relation to the users' needs*. These needs are performed as realities 'out there' for the group to discover. The different professional traditions are performed as interests that might thwart this discovery or hinder the effective organisation of work that meets these needs. The manager is thus forging a link between the user's needs and the geographical division. This attempt to enrol the users directly challenges the way in which social workers often perform themselves as spokespersons of the users' needs (cf. case 1).

On the issue of the team stage, we might note that the manager takes part in the performance of this as a singular reality. She explains the different scores as a matter of proper interpretation of the statements in the Team Profile®; differences are thus performed as epistemological, whereby the singular ontology of team stage is once again performed.

During the remainder of the day there are two rounds of group work and two plenary sessions. The consultants state that the purpose is to identify problems and to make plans for solving them.

In the group I followed there was a lot of discussion about professional demarcations. Several people said that you shouldn't work with something you are not qualified to. A support person stressed that you are educated for something particular, and you cannot ignore that. A home advisor said that they refused to have supervision on particular cases together with other professional groups. Only the home-helpers argued that there should be more 'flexibility'. In principle, the other professionals didn't disagree with this. But on a number of practical issues they were strongly against changing the present demarcations. Back in the plenary session, the concern for professional demarcation was supported by one of the other groups. This group introduced what they called a 'sharp distinction' between two levels of co-operation. On the one hand there is work specific to the professional groups on the other hand there is cross-professional co-operation.

In the discussion summarised above the majority of the social workers are performing social work as the exercise of professionalism and professional groups. They do this through vigorous labour of division. The professional demarcations are performed by enlisting a number of allies: The social workers' skill and comfort in working with things they know about, the educational specialisation, and the concern for the quality of the work and the clients' welfare (thus taking back their ally). To some extent the social workers try to reconcile this performance of professions with the team project by making room for some cross-professional co-operation between the sharply demarcated professional regions. In this way 'the cross-professional' is performed as a residual category negatively defined by the professions. Obviously this performance of social work based on the 'facts' of professions runs counter to the manager's performance of social work based on the geographical division.

Toward the end of the day the groups present their work. One group lists a series of demands for supervision and education.

Manager: It looks good, though I might doubt that it is realistic. But where are the users in your plans?

The home advisor from the group explains that supervision is a 'must' in their work, and education is important to make them think of themselves as a team. Of course all of it has to be in relation to the users.

Manager: but it would have been good, if it was related to an investigation of users in your area.

Social worker: Investigation of the users requires education as a team. It is an illusion to believe that you can put 13 people together and say "go!" The users have always been near to our hearts.

Manager: I am worried about the emphasis on the staff. In my presentation I was talking about the users, I miss that in your proposal – they are not there as clear focus points.

Social worker: That is because we are not starting from scratch – we are the ones that fill the needs – you shouldn't doubt that we have that attitude.

In this snippet, there is a struggle between two performances of the relation between users and the professions. The social workers perform *inclusion*; when they demand supervision and education for themselves, then it is implicit that it will benefit the users. The manager performs *detachment*; the users' needs are to be investigated and discovered. They cannot be derived from the existing professional demarcations. So in the manager's version you should start by identifying the users within the geographical areas, then you should consider what resources are needed, and finally you should work out a division of labour that would meet the needs. In the social workers' version you start with the fact of professional groups that know their users, then you should consider what resources are needed to make the professions work within a team structure, and finally an additional region of cross-professional work can be delimited.

With the social workers' and the manager's different ideas about the division, the team and the users, two opposing 'programs' have been articulated. Whether there will be a stalemate, or whether one of them will prevail, depends on which 'loads' either program is able to attach. In the following events a number of different 'loads' will be brought into the struggle.

Meetings in Geographical Groups

In the three months following the team training sessions, there were a total of 9 meetings in the three geographical groups. So on average the groups met

once a month. The meetings lasted between one and two hours and they were all scheduled on late afternoons after the working day in the professional groups. The team manager participated in many of these meetings including the one referred to below.

> At the first meeting in one of the geographical groups, the group members shared information on how the different professional groups relate to the geographical regions. The caseworkers have their case files in two groups of file cabinets, one for early retirement and one for supplementary benefits. Within these two domains, the cases are ordered by date of birth. However, as a preparation of geographical grouping a label in one of three colours, indicating the geographical region, has been added to each file. But the caseworkers still divide the cases between them in the way they did previously: Some caseworkers deal with early retirement, others deal with supplementary benefit. And within the latter group some caseworkers deal with clients born on dates ranging from the 1st to the 15th in the month, and others deal with the 16th to the 31st. So the coloured labels is the only thing that has been changed or rather added to the materialities and the workflow of the caseworkers. The home advisor in the group reports that they are criss-crossing the entire geographical area, so no changes have been made with respect to geographical grouping. The contact person and the home-helper explain that they try to take geographical groups into account when they distribute *new* clients. But certain other criteria are more important. E.g. which of the social workers has time, and whether the client prefers a male or a female social worker.

In this part, the social workers talk about particular heterogeneous orderings. The placement of case files, the allocation of cases and responsibilities between the social workers, their physical movement, their forging of relations to clients. All these produce particular distributions that collude to perform a reality of professional groups. The orderings traced in the social workers' talk do not resonate particularly well with the idea of geographical groups. In fact, the present orderings continually trouble the geographical division by criss-crossing its borders. So rather than a successor reality, geographical grouping is performed as an awkward *add-on* to the reality of professions; The addition of labels to files that stay where they are, or one extra concern to be added in the rare instances when everything else is equal.

As the meeting goes on, the team manager initiates a discussion about blurring the boundaries between professional groups. A home-helper expresses the wish to do other kinds of things than just cleaning. A social worker says that she sympathises with the home-helpers' wishes, but that the caseworkers would never do cleaning work unless they were specifically ordered.

The manager says that according to the official project plan the teams must tear down the professional demarcations, but also retain professionalism. "We would serve ourselves by coming up with some ideas of how to do this".

A caseworker says that it is hard to think those thoughts at the moment, because they have to work overtime one day a week just to reduce the piles of mail. Furthermore, there are two vacant positions in the caseworker groups at the moment.

A home-helper states that they ought to be 15 staff to 70 clients, but at the moment they are 12 to 130.

The manager asks if they are saying that teams are impossible?

Several of the social workers say 'no', but in a rather mild way.

The manager states that geographical regions is the choice that has been made. This makes it possible to find specific target groups within each region. "Not 200 cases, it could be 5 – the level of ambition is no higher than that".

The social workers go along with this by starting to discuss the specific problems of getting access to the labour marked experienced by young people with mental problems.

The manager says that it is sensible to use the meetings in the geographical groups to prepare some project that can be carried out, when more resources are obtained.

Towards the end, it is agreed that the caseworkers will bring about 5 case files to the next meeting.

In this snippet, performances of professional and geographical groups get related once again.

In the first part the caseworker performs the professional groups in one more way: She (and her colleagues) *will* not do cleaning work. This clear

expression of *interest* (or lack thereof) is countered by the manager, who evokes the project plan issued by the board of the Family and Labour Market Administration. Now, the social workers retreat into *facts*. Facts about the lack of resources. Their resistance to geographical groups is now performed as a matter of lack of ability. And this lack is so severe that *paralysis* is performed. Countering this, the manager performs the geographical groups in a *visionary* way: matters should be arranged in such a way that geographical groups can be performed in the future. This entails a level of ambition as low as 5 cases, which considering the total number of cases in the region to be around 1000, makes the manager take part in the performance of geographical groups as an reality *added onto* the professional groups.

Some if not all of the above sound familiar. Fact, interest, paralysis, vision. We have come across these before. And we also recognise the distribution of political will to the manager (decision-maker) and facts to the staff (civil servants). Furthermore, we recognise the continued performance of professional groups as well as geographical regions. What is different in this case, however, is the specific project or puzzle that is created. What can be drawn together in the work with 5 cases? Which kinds of calculations can be made? Which realities will be performed with this new set of props? The following event will throw some light on these questions.

> A month later, the same geographical group reconvenes. One of the social workers brings 4 cases, but she soon discovers that one of them doesn't fit the target group of young people with mental problems. She explains that she has been busy and she just found the cases this morning "in the top of the pile". A home advisor, who should bring another case, did not appear at the meeting. But one of the other home advisors says that he has the case "in his head".
>
> The manager inquires about action plans in the cases. There are none.
>
> The home advisor explains that they don't make plans for the residents in supported housing, because plans tend to become restraining. They do however have a personal meeting with a contact person, if the resident comes from a mental hospital. The contact person is also invited to join a supper in the supported housing facility, and matters are discussed on this occasion.
>
> The caseworker declares that if you find one action plan in a thousand early retirement cases, you're lucky.

The conversation moves on to a particular activation project that the home advisors knew about through a pamphlet they got from the caseworkers. Apparently this was a great success for two of their residents. And there is more talk about different projects, the general decline in the number of these, and the scattered information.

The manager inquires if one of the social workers could visit a housing facility and present information to the residents. After a short discussion of this the social workers conclude that it would only benefit 2 of the 7 residents, so it would be a waste of resources that are particularly scarce at the moment. But as an alternative the caseworkers encourage the home advisors to escort their clients to the local centre to get information.

The manager says that she is "getting tired" because the talk is about resources rather than how the geographical group might work 'in principle'.

The caseworker replies that she thought the question from the home advisor was meant in a concrete way. She didn't disagree with the idea of visiting the housing facility in principle.

The home advisor adds, "It *was* a concrete question"

The talk continues around the issue of information. The caseworkers explain that they circulate new pamphlets in a particular folder. The home advisors could perhaps be included on the list of recipients. There is talk about collecting everything in a ring binder, including the minutes from the meetings of the geographical groups. But then it is unclear where to place it and who should maintain it.

In the above sequence there are a number of failed attempts to draw things together. Fewer cases than expected are brought to the meeting. Action plans cannot be drawn from the files. The visit of a caseworker to the housing facility does not work out. The dissemination of information is still scattered. One way to look at this is to see the manager's work as attempts to establish the cross-professional group as an *obligatory passage point* for the solution of particular problems: Better actions plans could perhaps be made by bringing cases to the group. Better information about activation projects could perhaps be given if the caseworkers visited the home advisors of this group. Unfortunately for the manager, the social workers come up with alternative solutions to the same problems. Action plans are not necessary because a verbal transfer and a supper in the housing facility work better. Information

doesn't require the movement of the caseworker, it might just as well be spread through pamphlets, or by having the residents visit the local centre. With these solutions, the professional groups are performed as assemblages of people, artefacts, and locations that make particular actions and knowledges possible[32]. Furthermore, the claim seems to be that only *ad hoc* connections between professional groups are necessary. This performs the geographical group meeting as one among many occasions for ad hoc information exchange, another *add-on* to the reality of the professional groups. Of course this performance runs counter to the manager's performance of the meeting as a unique and obligatory passage point.

Last Team Training

After three months, during which the geographical group meetings took place, the social workers were once more summoned to fill out the Team Profile®. And again this was followed up by a day of team training. On this occasion, the consultants presented new plates with results from the Team Profile questionnaire.

In brief, the consultants gave the following interpretation: Group I has moved a bit forward. Group II has clearly moved forward. Group III has moved backwards.

[32] Law (1999b) has developed the notion of *knowing locations* to designate such heterogeneously constructed, temporary and local effects of knowing.

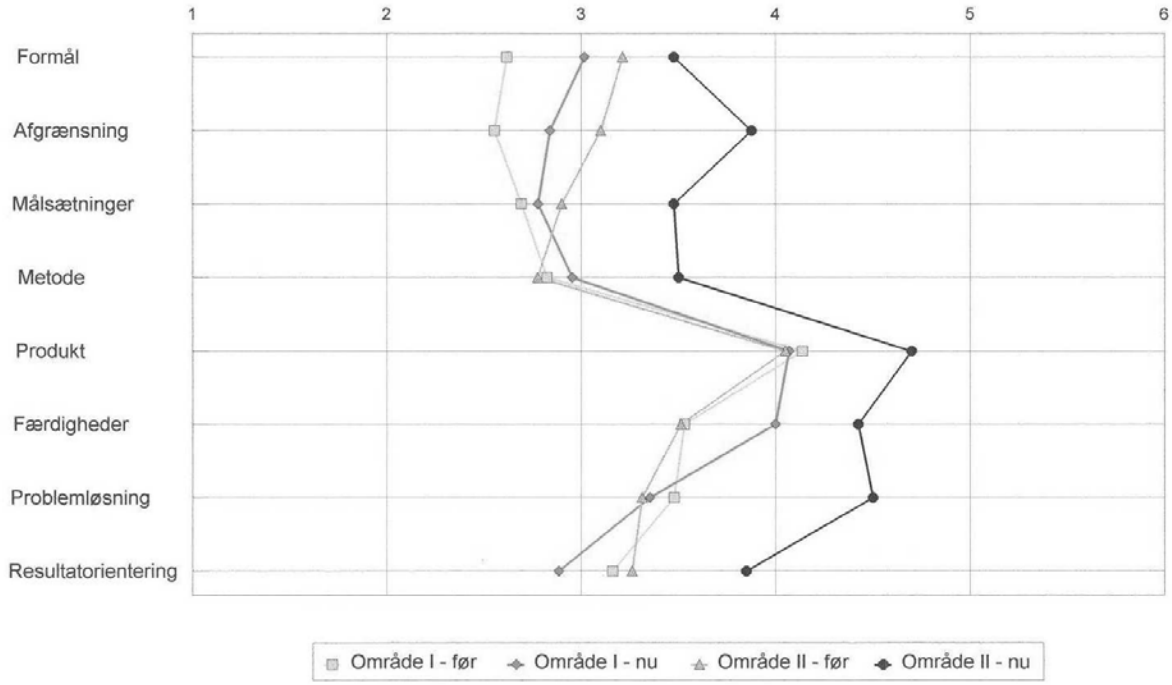

Figure 7. Team Profile® scores 'before' and 'now' for geographical groups I and II
The text below the curves reads: Area I – before, Area I – now, Area II – before, Area II – now.
The vertical text indicates different scales on the Team Profile®.

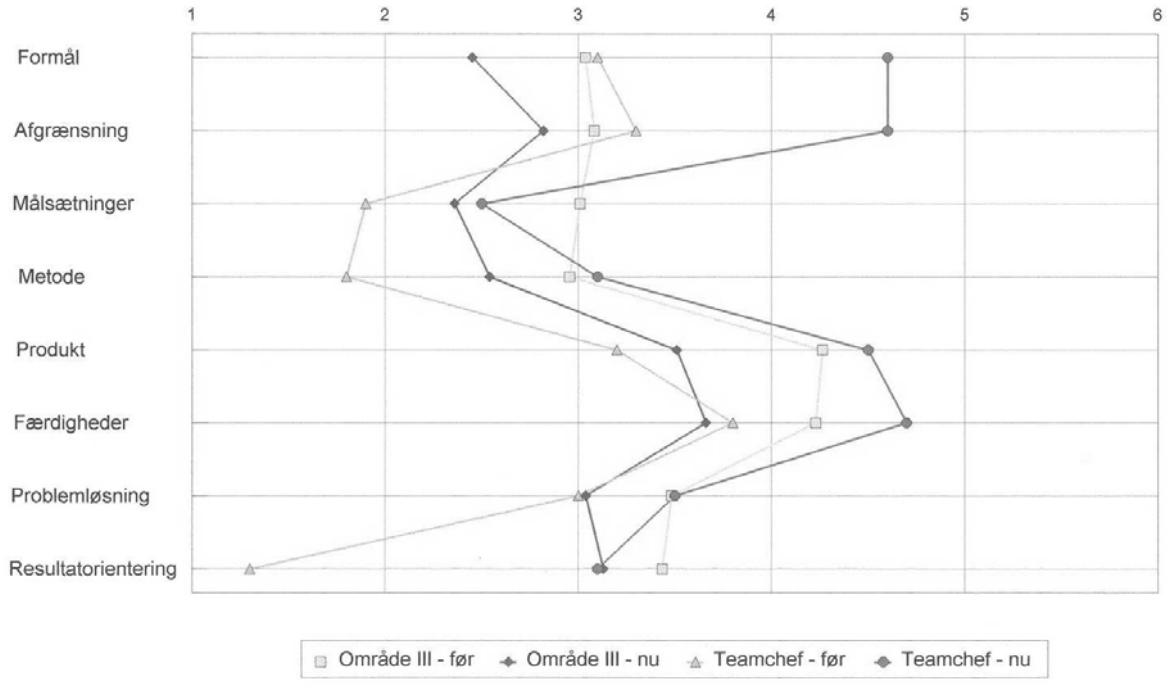

Figure 8. Team Profile® scores 'before' and 'now' for group III and the team manager
Text below the curves: Area III– before, Area III– now, Team manager– before, Team manager– now
The vertical text indicates different scales on the Team Profile®.

In the presentation of the Team Profile the singularity and developmental process of the geographical groups are once again performed. The juxtapositioning of late and recent measures on a normative scale makes it possible to construct forward and backward movement. In addition, the juxtapositioning of groups makes it possible to construct a ranking. Taken together, this performs a certain distribution of morality: It is implied that everybody should act like group II ('moving forward') and avoid acting like group III ('moving backward'). So now the Team Profile seems to have returned to the role of a faithful ally to the geographical division. No fingers are pointed at the manager, and the scores urge the social workers to improve the geographical groups. However, as it will be recollected from the description of the last team training, the moral effect of the Team Profile does not necessarily last very long. On that occasion, the social workers as well as the manager refused or weakened the moral claims made by the consultants. The question is what will happen on this occasion?

After the presentation, the social workers were asked to go into their geographical group, and each group was requested to explain its scores and its 'movement' on the Team Profile®.

In the subsequent plenary session, the consultants asked ('the forward moving') group II to make the first presentation.

A caseworker from group II said their best guess was that the scores were due to the small number of people that filled out the Team Profile this time and last time. "The people who filled it out this time must see things a bit more rose-coloured". She went on to tell that the group members agreed that no particular improvements had taken place.

One of the consultants queried why.

The caseworker explained that there was no cross-professional collaboration in the geographical groups, because there had been neither time nor opportunity. The cross-professional collaboration that does take place is directly between the professional groups. The reason for this is that nobody works with clients in just one region.

Consultant: "So the geographical grouping is actually inexpedient?"

Caseworker: "We didn't discuss that, but that has been my personal opinion all along."

In this part the consultants' performance of team stage and moral ranking is pushed aside. The caseworker simply points out that too few people answered, and the epistemological value of the Team Profile is questioned to the extent that it can easily be replaced by the group consensus. However, the ontology of a true *team stage* is still performed. In this case a group stage that hasn't improved. This 'fact' is used to perform the geographical group as a place where nothing happens, as opposed to the professional groups that are performed as locations of real work. In this argument, 'a low team stage' is placed in a set of relations, which *reverses* the effect that the consultants tried to achieve. The consultants seemed to suggest that a low team stage should oblige the social workers to put more effort into the geographical groups. But the caseworker argues that a low team stage proves that geographical groups are senseless and therefore unworthy of any further effort. In fact she implies that since the work in the professional groups is what truly benefits the users, it is morally questionable not to recognise the reality of the professional groups. The 'fact' of the team stage is thus taken over and used to argue against the geographical division.

After this, there was a long discussion in which a number of viewpoints were voiced. I will just mention the most significant positions: On the one hand the chief consultant stated that the geographical groups appeared to be *pseudo groups*, while the professions were the real groups. On the other hand, the team manager stated that it was *too early* to change the geographical groups. Most of the social workers supported the chief consultant's critical evaluation of the geographical groups, but some of them also raised concerns over target group division, which was taken to be the inevitable alternative to geography[33].

The discussion once more articulates a conflict between the geographical groups and the professional groups. The social workers will not give up the reality of the professional groups, and the chief consultant seems willing to lend his support to this. But the manager will not give up the geographical division, and neither will some of the social workers. So there are two conflicting ideas of what the team is or should be. And neither of these 'programs' is willing to leave the scene.

[33] One problem raised by the social workers is that the division of cases may lead to unpleasant battles over resources even among former good colleagues, especially if the lines of division are less than crystal clear. This is precisely the case with a target group division because a number of clients will belong to several target groups.

In the last part of the team training, the consultants asked the social workers to go into *professional groups* and discuss how they could collaborate with the other professions.

In the ensuing discussion, it was clarified that the caseworkers have 3000 cases of which 48 are shared with the home advisors and 124 are shared with the home-helpers. It might be possible to discover more clients that could be shared, but it would still be a relatively a small number. Based on these figures, the caseworkers made the point that the extent of the cross-professional collaboration must necessarily be very limited.

The chief consultant asked if the shared clients might be particularly 'heavy'.

A social worker turned this down by saying that it would be most expedient to identify the extent of the necessary cross-professional work and limit it.

Another social worker asked the chief consultant, "has this entire team really been amassed for just one hundred users – I think that's a tremendous apparatus!"

The chief consultant says that he wouldn't be the one to answer that question.

The manager didn't reply either.

In this last snippet a calculation, based in the numbers from the manager's working group, is mobilised by the social workers to perform the professional groups as a reality and a rule to which cross-professional collaboration is only an exception. At this point, the consultants are also contributing to the performance of professional groups: They ask the social workers to divide into professional groups, and to speak on behalf of them. In this part, the manager doesn't perform alternatives to professional groups either.

So the long story of the team project ends with a paradoxical twist. It began as a story of how social workers were detached from their professional groups and entangled in the team project. And the story ends at a point where the manager, the consultants and the constructions of the team project get entangled in the performance of the professional groups.

Performances in Case 4

Case 4 is a series of events, which I have chosen to analyse in relation to the question that emerged from case 3, namely what happens to the geographical division when it moves beyond the working group? The answer to this is complicated, I think, for the following reason. The relation between the geographical division and 'the rest' is not a simple tug-of-war, but rather a game in which numerous entities are rearranged several times.

In addition to the geographical division, the significant entities are: the manager, the consultants, the Team Profile®, the team stage, the benefit of the users, the function of the geographical group meetings, and then of course the professional groups. In the following, I will try to sum up the ways in which the geographical division meets these entities.

The first story begins with a rather seamless incorporation of the geographical division into the administering of the Team Profile®, and the creation of a singular ontology of the team stage. At this time, the manager, the consultants, the geographical division and the Team Profile are all in accordance. But then the results are presented and a difference appears between the manager and the social workers. The consultant and the social workers interpret this as a lack on the manager's behalf to see the reality of the team. The former alliance is breaking up. Furthermore, the social workers weaken the 'moral force' of the team profile by evoking the reality of professional groups, so now an additional 'entity' is entering the game.

Second, the manager makes a speech in which she argues that a geographical division – not a professional division - is a sine qua non for the benefit of the users. In this way, she enrols the users to support the geographical division. This is immediately and strongly contested by the social workers, who argue that effective professional groups is the only way to benefit the users. So what becomes apparent here is that the manager will not be able to recruit 'the users' on her side. The social workers will directly confront this attack on their traditional ally.

Third, the manager requires the social workers to meet in the geographical groups to discuss possible cross-professional projects. The meetings entail a number of deferrals or disentanglement-moves somewhat similar to the ones described in the case of the working group (case 3). Among other things, the geographical group meetings only occupy a small part of the working hours, and the manager lowers the level of ambition to projects involving five cases. These moves create room for the performance of a puzzle – the attempt to establish the geographical group as an obligatory passage point for cross-professional collaboration. However, the social workers refuse to grant this obligatory status to the geographical groups. They constantly evoke

alternative ways to achieve the same goals, and they perform the geographical group meetings as one among may occasions for ad hoc co-ordination between professional groups.

Finally, at the last team training, there is another attempt to use the Team Profile to create a moral obligation to improve the 'team stage' through the work in geographical groups. However, in this case the ontology of the team stage is seized by the social workers, who argue that the low team stage indicates that the geographical groups are meaningless, as opposed the professional groups, which are the locations of real work. Moreover, the distribution of clients (numbers originally produced by the working group) is used to argue that cross-professional collaboration must be a rare exception to the rule of professional groups. So in this situation, it seems that the geographical division has lost its supports, and the proponents of professional group have begun to take over its former allies. The effect of all this is that the geographical division becomes increasingly hard to defend.

Moreover, it gradually seems to erode. Its parts and allies (numbers, Team Profile®, and team stage) are taken over and used in the performance of professional groups. And the geographical group meetings themselves are performed as parts of the ad hoc work of professional groups.

But, and this is important, it does *not* seem that the geographical groups will dissolve completely or disappear. They might have failed as an obligatory passage point, but they still appear as epistemological entities on the Team Profile®, as lists of street names and social workers on paper, and in the manager's emphatic declaration that it is too early to change them. Furthermore, the social workers indicate that they do not want the option of 'target group division' either. So at the end of case 4, the geographical division is only *partially* dissolved. It is another order, which never attained purity. And it is another (dis)order, which is now entangled in so many actors, locations, and materials that it will not be purged in the near future. It has become another performance in the texture of performances that makes up the social administration.

Concluding Remarks on the Analysis of Performances

In this chapter, I have worked through a large amount of empirical material using the notion of performance as my primary theoretical tool. I have tried to stay loyal to the definition of performances as unbounded, materially heterogeneous, recursive processes that can be imputed to the social. Furthermore, I have taken methodological inspiration from the authors in 'the performative turn'; I have systematically directed my attention to the specificities of doing, to the differences in performances, and to the relation between performances. At this point, I will attempt to summarise and synthesise the results of my empirical analysis.

Types of Performances

I will begin by making a brief list of the host of performances, which I have already described.

In case 1, I mentioned four different performances of social work. On the one hand the *statistical* and the *political* performance. On the other hand the performance of social work as *user-functional* and social work as an excise of *professionalism*.

In case 2, I described different performances of decision-making or 'due process' in relation to the issue of subdividing the team: The *agora*, the *informed managerial decision*, and the *expert- dialogue*. In addition, I mentioned a number of different options, which were articulated in the process: *professional groups*, a *geographical division*, and a *target group division*.

In case 3, I depicted performances in the working group. On the one hand, there was the performance of *paralysis*, *labour of division*, and *worries*. On the other hand, the manager successfully established an alliance between the performances of *deferral*, *vision* and *calculation*.

In case 4, I outlined the complicated relations between the *geographical division*, the *Team Profile®,* the *team stage*, the *benefit of the users*, the *function of the geographical group meetings*, and last but not least the *professional groups*.

Types of Relations

The next question I will address is how to describe the relations or the relational patterns of these performances. As I have already indicated, Law &

Mol's notion of different spatial types is a useful way to deal with this question. My claim is that several different kinds of space are performed in the course of the team project. I justify this claim through a number of snapshots:

Regions
In the discussion of the opening hours, everybody stays on their 'home ground'. On the one hand there are regions of politics and statistics, which generate one uniform opinion on the matter. On the other, there are regions of professionalism and users, which give rise to a contrary but equally homogeneous opinion. The social administration is thus performed as a mosaic of stable areas, which are largely unaffected by each other. A regional space.

Fire
At the first team training session, the team embarks on the process of deciding how to subdivide the team. This entails the articulation of number of mutually exclusive options and the evocation of a number of different versions of due process. This performs a space of 'conjoined alterity', a space of fire. In this space, there is conflict and flickering between different futures, which are all both absent and made present in the form of options. In addition, there is a distinct immobility created by the adverse relationship between any one option and all the others.

Networks
The geographical 'solution' is the product of a long and careful process of enrolling and aligning allies. Representatives of the professional groups have been persuaded to participate. Numbers, categories and maps have been gathered, and a series of calculations have been performed. The resulting alliance is a geographical division with a fixed, functional set of relations, designed to mobilise the social workers. Moreover this network will, like other networks, create the effect of particular differences or boundaries, in this case geographical boundaries.

Fluids
At the final team training, the social workers argue that the low team stage and the uneven distribution of clients prove that the geographical groups make no sense. In this argument 'facts', previously constructed as allies to the geographical division, are now seized and used in the performance of professional groups. The network of the geographical division is thus

displaced and partially incorporated into the shapeless and omnipresent creature of 'professionalism'.

Maintaining Spatial types and Moving Between Them

I have now listed different sets of relations between performances[34]. I will call these spatial configurations or simply *configurations*. With the list of configurations at least two questions can be raised. First, what kind of work maintains a particular configuration? Second, what kind of work changes one configuration to the next? I will answer these questions empirically[35].

Maintaining regional space

Regional spaces are maintained through labour of division; Established areas of expertise are evoked in arguments. Speakers present themselves as representatives of areas. Speakers avoid touching the 'home ground' of speakers, who represent other areas. Border zones, which are not clearly related to established areas, are avoided. One significant effect and part of the labour of division is the tendency to deconstruct objects that span the regions[36]. The construction of a general fact such as "we can all agree that the opening hours are bad" is thus an uphill battle in regional space.

From regional space to fire space

There are two kinds of work that moves the configuration from regions to the 'conjoined alterity' of fire space. First, there is the work of detaching the social workers from their professional regions. This takes many forms: cancelling clients, leaving the local centre, performing individuality in various exercises orchestrated by the consultants. All this articulate differences, including differences within the professional regions. Second, there is the work of bringing these differences close together and thus increasing the intensity; Asking the social workers to decide between "the standard program or something else". Listing principles next to each other. Presenting the opinions of groups sequentially. Articulating options. Arguing for and against

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[34] The reader, who wishes to think in terms of systems may regard regions and fluids as loosely coupled systems, and fire and networks as tightly coupled systems (cf. Weick 1979, Weick & Roberts 1993).

[35] Because I answer the questions empirically, I can only comment on the configurational shifts in the present material. This leaves out a number of logical options, such as a shift from fire to fluid, or a shift from networks to regions. In fact, my material only covers 7 out of 16 options (3 out of 12 shifts, and 4 out of 4 instances of 'maintenance'). In the words of the Danish psychologist Tranekjær-Rasmussen, I am building a *completable* model, not a complete model.

[36] Star & Griesemer's classic article on boundary objects can be read as a description of the extraordinarily hard life conditions for in-between objects in regional space (Star&Griesemer, 1989).

particular options. Arguing about due process. All of this moves the spatial configuration from a stable regional space to a hot, conflict-ridden fire space of conjoined alterities.

Maintaining fire space

Fire space is created, as well as maintained, by work that articulate and juxtapose differences. But there is more: The creation of what I have termed the empty opportunity-charged space constructs a day to be seized. This is work that drives out differences and brings them close together in time by constantly stressing that time is running out. It is now or never. It is the last chance. The decision will be made soon. We must move on. This work is closely related to the performance of due process as an informed managerial decision. This performance also maintains the fire space in another way. I have described how the construction of a public space and the performance of 'civil servants' create a particular format in which differences of opinion are given the form of factual arguments. This generates the effect of assembling a lot of facts on one location. The facts are of course different, but they can nevertheless be ordered and juxtaposed. So alterity is conjoined rather than dispersed, as would be the case if 'interest groups' were allowed to retreat to their professional regions. The work of collecting facts is thus crucial to the construction of a fire space and to the work of immobilising actors that try to move back to regions.

From fire space to network space

The movement from fire space to network space initially entails the work of making a difference between the alternatives that have been conjoined. The manager does this by saying "let's play with the geographical division" and by later declaring that "the professional groups must be mixed" (thus raising doubts about the target group division). But the manager needs allies, so the next type of work is about interessement and enrolment. She forms a working group, which simultaneously make a number of social workers parts of her project and detach them from their professional groups. Her idea of a geographical division is confronted with worries and even paralysis, which indicates that fire space is still performed; alterities are conjoined. Then the manager intensifies the work of 'interesting' the group members, i.e. going between the group members and the outside forces, which define them. "We must try to pretend that the necessary conditions are there", "worries shouldn't stop us, we must put the problems on a list, and I will take it to the management team". In addition, she manages to engage the social workers in a puzzle created by drawing together even more allies (numbers, lists, maps) and by introducing even more deferrals of alterities ("this is only on paper").

The manager's efforts finally pave the way for the calculations, which produce a solution that draws everything together in a fixed set of relations. Allies have finally been locked into place; a network has been constructed.

Maintaining network space

Maintaining a network requires a variety of efforts. First, there is the work of keeping disturbing others away from the ordered and fixed relations: identifying irrelevant cases that shouldn't count, "dead or in other municipalities". Second, there is the work of disciplining the actors that do count: knocking it into the heads of the home-helpers. Third, there is rationalisation of the reality created by the network: describing the product of the working group as an outcome a 'rational decision'.

The above-mentioned work secures the initial construction of the network. But in addition, there are efforts to make the network grow and to turn it into an encompassing reality. Actors in the network are mobilised when they are all drawn together, and someone speaks on their behalf. The clearest example of this is the consultants' presentation of the Team Profile along with comments such as, "all the geographical groups believe that..." An additional effort to make the network grow is the work of setting up obligatory points of passage, in order to make actors lend their strength to the network. The manager's attempt to define cross-professional projects on the geographical group meetings is the prime example of this.

From network space to fluid space

The movement from networks to fluids is, to put it shortly, generated by the work of finding other ways. There is the evocation of alternative realities; "We grant that the geographical groups and the team stage are real, but we also want to draw attention to the lack of resources and the importance of professional groups". There is the blocking of the network's attempts to expand; "We must protest the idea that geographical groups are the sine qua non for benefiting the users, on the contrary the professional groups is the only way to do it". There is work to perform alternative realities; A vast number of the professional groups' daily activities criss-crosses or effaces the geographical boundaries. And there are efforts to by-pass the obligatory passage points of the network; Countering the managers demands for cross-professional projects in the geographical groups by arguing that work is more conveniently done in different ways, at different times, and at different locations.

Maintaining fluid space

Fluid space is maintained by work that continually dismantles 'foreign' elements and incorporates them into a gradually evolving mixture of relations; the geographical team meetings are turned into occasions for information exchange. The geographical division is turned into an additional matter that might be considered in the distribution of clients. The low team stage is turned into an argument that the professional groups are the locations of real work. The figures on the distribution of cases are turned into the argument that cross-professional work must necessarily be limited.

Furthermore, the fluid space is maintained by the practice of *ad hoc* casework. Cases are handled with respect to the specific situation at hand and nothing else. Established regions and networks may be obstacles or resources in this work, but never its purpose. So ad hoc work is simply about moving the present case, with whatever tools are available, and for this reason every case may (or may not) erode established regions or networks[37].

The above descriptions of maintenance work and the work that produces shifts between configurations are summarised in a table in chapter seven.

Development of Competence

If I were to follow a purification strategy in the study of competence, my next question would be, what lies behind all these spatial configurations and re-configuration. But, since my project is committed to the opposite strategy, the strategy of complexification, my question is what the entire complex of relations enables the team to do.

My answer is that the competence of the team *is* its variety of performances. It acts like a regional space: separating matter and dealing with them in the pigeonholes of established expertise. It acts like a fire space: articulating and juxtaposing alterities. It acts like network space: 'interessing', enrolling and mobilising a heterogeneous crowd of actors into a fixed functional structure. It acts like a fluid space: gradually incorporating a variety of entities into a stream of ad hoc work. Finally and perhaps most remarkably, the team succeeds to keep moving between these spatial configurations. It doesn't get stuck.

But, what then is the *development* of competence. How does the competence of the local centre change in the course of the team project?

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[37] I have earlier described a professional's work to circumvent obstacles, keep the situation moving and incorporating numerous entities (Elgaard Jensen, 2001).

Perhaps it might be possible to construct a *functional* story to answer this question. One might take the list of maintenance and transformation work and turn it into a story about the sequential and progressive development of competence. Such a story would depict configurations as production events linked in a chain that move step by step toward the final form of competence. We would then say that the output of the regional configuration generates the input to the fire configuration and so on. And we would say that the final product of this developmental process is fluid space.

However, this story doesn't really work. The first problem is that the so-called 'first steps' do not stay intact when the relations between performances move to the next configuration. A later configuration does not come into being by elegantly translating the earlier configuration into a faithful ally. The process is more accurately described as breaking up or dissolving other configurations. The image is thus not one of ascending to a higher level, but one of tensions and continual re-ordering. Configurations are not building on top of each other; they are feeding on each other's debris.

The second problem with the functional story is that it suggests that the earlier configurations disappear or become unimportant. The assumption would then be that fluid space has come to prevail. But such an assumption is unwarranted. The regional space of areas of expertise was temporarily effaced at team training sessions, but it is still performed in the daily work at the local centre. The fire space was temporarily changed when the manager pushed for a geographical solution, but the alternatives of 'target groups' and 'professional groups' frequently re-appear in the discussions. The network space of the geographical solution was severely criticised at the last team training session, but the manager declared that it is too early to let it go. All of this suggests that the so-called earlier configurations are still around. And so the tensions between configurations as well as the opportunities to 'feed on' each other remain.

The image of spatial configurations in tension, which concludes the analysis of the four empirical cases, will be further developed in the next chapter.

Chapter six

Following the Objects

The argument so far can be recast the terms of my analysis in chapter 2. Latour & Woolgar's observer could not help noticing the striking difference between room A and B, and I could not help noticing the striking differences between the various performances in the team project. The observer asked about the relation between room A and B, and I asked about the relation between performances. The observer broadened his explanation by arguing that the functional chain of the laboratory is actually biting something ('scientific facts') which is connected to its own tail ('inscription devices'). And likewise, I argued that the spatial configurations are feeding on each other. In this way my explanation takes the form of a network, which I have carefully constructed through a series of combinations of data and ontologies. And I might add that my empirical analysis depended on a particular inscription device called the concept of performance. This device, a network in its own right, was constructed in chapter 3 and 4 through a process of evoking, ordering, and disciplining a number of other theoretical networks.

But where should I go with 'my' network from here? At this point I will take inspiration from another network-creator in my story, the team manager. After the effort in the working group, she attempted to solidify the network by linking it to further allies such as arguments about the benefit of the users. In this chapter I will make a similar attempt to forge solidifying links from my story of competence as spatial configurations. I will do this by looking at how objects move between the spatial configurations. But before I enter into that, I need some further arguments to clarify my position.

In my presentation of the performative turn in STS, I listed three different ways to talk about performance: Modes of ordering, spatial types, and multiple objects. I argued that these should be viewed as *supplementary* rather than mutually exclusive strategies for imputing patterns to the social. In the previous chapter, I worked through four cases, imputing patterns with labels such as 'the political performance of social work', 'the expert-dialogue' and 'vision'. I consider these patterns to be akin to John Law's modes of ordering. In the conclusion of the previous chapter, I used the notion of spatial types as a convenient way to order my lengthy list of modes of ordering. This might be read as a claim that spaces are *made of* modes of ordering. While this is not

wrong, it is not entirely right either. I do think that a cluster of modes of ordering can be translated to a particular spatial type. But I do not think that the modes of ordering are simply equal to or can be reduced to that spatial type. Furthermore, I think that a reverse move can also be made: A description of a spatial type can be incorporated into the description of a mode of ordering. For instance, the notion of regional space might fruitfully be incorporated into the mode of ordering, which Law calls vocation. So my argument is that translation can go both ways. This allows me to qualify my previous remark that modes of ordering, spatial types and multiple objects are supplementary. By this I do not mean that they are supplementary in the sense of philosophical realism. They do not hold separate pieces to the same jigsaw-puzzle, or different parts of the same singular object 'out there'; The image of the blind men and the elephant does not apply. Their supplementarity lies in the fact that one can be translated into the other *and* the other way around. (If the latter were not the case, one would be a helping concept not a supplementary one). So my claim is that modes, spaces and objects are supplementary because, they are mutually included. Each of them is made of some of the other, and for this reason analytical resources can be mobilised by bringing all of them into play. In addition, this means that I am now moving away from the network metaphor, which I derived from my analysis of Latour & Woolgar. Instead I will think of my own account as a case of different but mutually implicated performances. Perhaps something resembling a fluid; everything informs everything else, and but no element is an obligatory passage point for all the others.

With this argument, it is time to bring the third musketeer into the performance-battle: the notion of the *object*. In the following I will solidify and expand my previous account of orderings and spaces by an attempt to follow a number of objects. I take an object to be something that retains it shape, but what this means depends of the spatial configuration in question. Objects and spaces are co-constituted, and therefore it is perfectly possible that an object in one spatial configuration is merely 'noise' in another. Furthermore it is possible that an object may hold together in several spatial configurations, or that the object may move from one spatial type to another through a more or less disfiguring process of translation.

My analysis of objects follows the same temporal outline as my previous account: First, I will follow a regional object into fire space, then a fire object into network space, and finally I will follow a number of network objects into fluid space.

Translation of Objects from Regional Space to Fire Space

In my analysis of the four cases, I have taken the discussion of opening hours (case 1) as an example of regional space, and I have taken the articulation of a decision (case 2) as an example of fire space. At present, I wish to make a closer analysis of whether and how objects are translated from regional to fire space.

The first task is of course to point out some tangible object in regional space, which I can track into fire space. The regional object, that I will take as my starting point, is that of *the expert*.

Examples:

- A central staff person stands before a group of social workers, claiming that "It is a bad political signal that we are closed from 1 PM".
- A social worker replies by saying that "the time for reflection ...will suffer" if the opening hours are expanded.

These events perform a world with a certain order of things. First, there are established domains or areas such as 'the political' and 'the professional'. Second, these areas are sufficiently homogenous to give rise to singular opinion on a particular matter. Third, the knowledge and opinion of an established area can be packaged into a human body, who can figure as an undisputed spokesperson of this area. *The expert* is thus a hybrid consisting of a set of links between a human body, acts of representation, and an established homogenous area of expertise.

So what happens to the expert, this object of regional space, when it encounters the fire space of decision-articulation? Is it welcomed or disowned, carried or blocked, strengthened or torn apart? That's the question.

As it happens, differences are articulated and brought together in more than one way in the fire space of the team training session. In fact, I described three different performances of due process: the agora, the informed managerial decision and the expert dialogue. I will look at each of these in turn to analyse the fate of *the expert*.

The expert and the performance of an agora

In the *agora*, the human body is not performed as a representative of an area of expertise but as an individual contributor. This individual is engaged in presenting herself to other individuals, in moving and mingling in a cocktail-

party situation, in displaying interest in other individuals, and in speaking in public on her own behalf. In all this, the link between bodies and areas of expertise is cut. The social workers are no longer performed as spokespersons. But how did this 'cut' in the links of the expert come about?

Strathern (1996) has discussed the process of stopping or cutting the expansion of particular forms of relatedness. One of her examples is about a group of scientists who invent a blood test. When 'doing science' they willingly recognise their dependence on a vast field and tradition of science; among other things, their scientific articles contain numerous co-authors and references. But in the event of registering a patent this expanded network is 'cut' or 'truncated' into a limited number of contributors. Strathern suggests that this cutting is effected by the intersection of two networks. The network of science is intersected by the network of commerce. The introduction of the commercial network makes it possible for a moment to cut or bracket the scientists' extended relations to their field.

I suggest that a similar argument can be made about the way the expert (body-representation-established area) is 'cut' in the agora. The consultants' staging of self-presentations and cocktail-party mingling evoke a network of citizenship. A network with a long modern history, substantial institutional supports, and strong moral claims about the rights of individuals; Everybody can and should speak for themselves. No established areas should limit the individual freedom of the individuals. All men are equal. The evocation of citizenship makes it possible to perform bodies as individuals, rather than representatives. In this way a link, which holds the object of the expert together, is severed. The expert is thus dismantled - for a moment - in the performance of the agora.

I will suggest one more process, which contributes to this dismantling. In the course of the team training session, the social workers are presented with questions such as this one: "Do you want the standard program for the day or something else?". One type of response, a response which is typical of regional space, would be to *pigeonhole* the issue. But in this case, the question does not fall into the pigeonholes of established areas of expertise. It is impossible to argue that a particular professional group is uniquely qualified to decide how the joint meeting should proceed. Another regional strategy, which we have come across, is to *deconstruct* the issue; in the discussion about opening hours, the 'badness' of the opening hours was deconstructed as a universal fact through the evocation of a number of different expert-opinions.

But in the team training session, the social workers must make a joint decision about what to do with the day. Neither pigeon holing nor deconstruction will

do. They are sitting in the horseshoe, the whole day has been set aside for team training, they cannot proceed before the decision has been taken. There is no way, the social workers can make the issue go away. I suggest that 'common' or 'universal' issues, such as what to do with the day, are objects that interfere with the established areas. The introduction of such *boundary-interfering objects*[1] is another process that cuts or dismantles the object of the expert. Boundary interfering objects don't fit into any of the established areas, and therefore they force the social workers to act on behalf of something else than their established areas of expertise. Thus the regional order of areas is momentarily interrupted.

The expert and the performance of informed managerial decision-making

Whereas the expert is dismantled in the performance of the agora, this object seems to do better when alterities are conjoined in the mode, which I have described as the informed managerial decision.

Something like this happens; The social workers start to perform themselves as civil servants. Now, they do not claim to represent an area of expertise inaccessible to outsiders. Instead they speak of facts, which are available to anyone in general, and the manager in particular. But of course these facts do not exist in and off themselves. Take this example: *One of the advantages of dividing the team into three geographical areas, is that the three caseworkers specialised in early retirement, can go into one each*. This fact may be read as an entirely logical and practical matter, a given. But it can also be argued that it rests on certain premises, most significantly the assumption that it is advantageous that none of the caseworkers will have to change their speciality. If we read it in this way, we can say that the caseworker, who contributes this 'information', has successfully translated an opinion generated within a particular area of expertise into a simple fact that will be taken into account by the manager. And like the construction of so many other facts, the trick is to silence the circumstances of production (cf. Latour&Woolgar). Not a word about the premises. So in this case, the expert is successfully translated into the civil servant, and the only thing that changes about the expert-object is that the link to the established area of expertise is silenced.

However, as I have also described in case 2, not every expert-object, manages this translation successfully. The home advisor is not able to turn his opinions

[1] Through this notion, I make an indirect link to Star & Griesemer's (1989) notion of *boundary objects*, which they define as things that are adaptable to different social worlds and sufficiently robust to maintain identity across them. However, I am critical of Star & Griesemer's tendency to naturalise social worlds. The omnipresence of boundary-interfering objects indicates that social worlds are much less stable, that Star & Griesemer seem to suggest.

into facts. When he proposes that the current professional groups stay unchanged, it is far too easy to say "You are just saying that because you are a home advisor", and then the link between his 'facts' and his area of expertise is made widely visible.

In sum the translation of the expert into the 'managerial' version of fire space stands or falls with the ability to silence the links to the established areas and thus turn expert opinions into common facts. If successful, the expert can play the role of civil servant, if unsuccessful, the expert will be considered an interest group. In regional space, a strong and visible link to an area is an advantage, because everybody remains on their home ground. But in a fire space, with boundary-interfering objects such as a common decision to make, there are no inalienable rights granted to the regions. Being an interest group in fire space, i.e. being unable to translate opinions into facts that are recognised by others, is thus a vulnerable position, because the boundaries are at risk.

The expert and the performance of expert-dialogue

Expert-dialogue is the term by which I denoted a third performance of decision-making in the team training session. In this mode, team decisions should ideally be handled in a forum consisting of representatives from each of the established areas. This version of decision-making is obviously very well suited for the expert. It recognises and depends on the firm links between bodies, representation and established areas. Furthermore, the purpose of the forum is not to merge or change the established areas. On the contrary, the aim is the establish a trading zone[2] which allows the areas to interact, while remaining separate.

The trading zone seems to be a hybrid form between regional and fire space. It depends on and endorses the regions, but it also articulates the alterities of these regions and brings them close together in particular forum.

However, the performance of decision-making as expert-dialogue was very limited at the team training session. In fact, it only appeared in the proposal from one of six subgroups and in a few of the home advisor's remarks. So the object of the expert was not allowed to enter fire space through this entrance.

In sum, the fate of the expert in fire space varied considerably. In the fire space of the agora, it was cut or dismantled by the evocation of a network of

[2] The notion of a trading zone is borrowed from Galison (1997). He further argues that trading zones develop a creole- or pidgin-like "interlanguage" to bridge the epistemic divide between separate communities.

citizenship and by boundary-interfering objects. In the fire space of informed managerial decision-making, some expert-objects translated themselves into civil servants by silencing their link to established areas. Expert opinions were thus translated into facts. But other expert-objects were unable to silence their links and were rejected as interest groups. Finally, in the rather weak and isolated vision of fire space as expert-dialogue, the expert is seamlessly integrated thereby creating a hybrid spatial type of regions and fire[3].

Translation of Objects from Fire Space to Network Space

In my analysis of the cases, I have taken the first team training session to be an example of fire space (case 2), and I have taken the effort of the manager's working group to constitute a network space (case 3). I will now attempt to follow the movement of an object between these two spatial types.

But what would be a quintessential object of fire space? My best guess at such an object is the *articulated conflict* between three different ways of dividing the team: (a) the geographical division, (b) the target group division, and (c) the existing division into professional groups. This conflict bears the hallmarks of fire space. It is about *alterities*; the three ways of dividing the team are articulated as different and mutually exclusive options. It is about *conjoined* alterities; the options are juxtaposed and linked to each other. When someone speaks against one, she is usually asked to defend the possible alternatives. When someone argues in favour of one, she is often asked to comment on the potential gains that are missed by not choosing the others. Finally, the conflict bears the hallmark of *immobility*; the articulation of the conflict implies that attempts to 'go for' one option is restrained by the disadvantages in relation to this option, as well as by the (lost) advantages related to the other options.

So how does this fiery conflict-object fare in network space? I have argued that the work that moves the spatial configuration from fire space to network space hinges on making a difference between the options, and then gradually making one option prevail. This would entail that the other options are subdued, and that the articulated conflict is either blocked or translated into another kind of object.

The first event that paves the way for a shift toward network space is a team meeting, which follows up the first team training session. On this occasion, the manager openly declares that the professional groups must be blended. By

[3] A similar case of combining areas of expertise, without reducing one to the other is described by Dugdale (1999). She argues, that the apparently singular product of an expert-committee (a consumer information leaflet) in fact contains multiplicity within.

doing this, she attempts to rule out no less than two options: The existing division of labour, which doesn't blend the professional groups at all, and the target group division, which would blend some but not all of the professional groups[4]. How does this *cut* of two out of three options come about? The answer is quite simple, the manager refers to her instructions from the consulting firm, "The professional groups must be blended", "They din it into my ears". And she refers to the official and widely publicised project goals decided by the board of the FLMA. Strong networks of managerial rights are thus evoked in an attempt to sever the ties between two of the options and whatever or whoever would support them. And there is indeed a lot to cut in. Before the manager's declaration there was a lengthy discussion, in which every single option, was supported by agora-individuals speaking on their own behalf as well as experts speaking on behalf of their professional group.

So what happens next to this three-pronged conflict, which the manager attempts to cut down to a single option? The manager forms a working group, and the discussion continues. In the working group the social workers do not insist on a professional or a target group division, but they constantly articulate worries about the geographical division, which the manager seems to favour. As the meetings move on, the managers finds more ways to interest the social workers, that is to go in between the social workers and the worries which pull them way. Through her performance of vision, she evokes a situation in which the necessary conditions are present, and she argues that the social workers should pretend that this is the case and thus leave the worries out of consideration for a moment. Furthermore, she gathers additional allies (such as numbers and maps), which allow her to define a puzzle. This exercise is very powerful and compelling because it mobilises a broad set of allies, but at the same time it can be depicted as 'benign' because it is 'only on paper'. With the solution of the puzzle, it seems that the geographical option wins. But things are in fact more complicated. As I pointed out, the manager argues that each geographical group should identify some important target groups (within its region), and design cross-professional projects aimed at these. So the target groups are still around. And the professional groups have not left the stage either. The manager counters the worries about professionalism by saying that each person in the geographical group should retain his or her core area, but the group must also jointly manage the work outside the core areas. So the objects created by the manager are geographical groups which *contain* professional groups as well

[4] The likely outcome of a target group division would be (1) a group aimed at mentally ill clients containing *all* the support persons and *all* the home advisors, (2) a group aimed at substance abusers with *some* of the home-helpers and *some* of the caseworkers, (c) a group aimed at 'the marginalised' with *the rest* of the home-helpers and *the rest* of the caseworkers.

as target groups. The former conflict-object, which *juxtaposed* three options, have now been transformed to one option, which envelops the two others.

This new containing object is different from the initial fire-object in several respects. First, the containing object does not consist of *conjoined alterities*. The three options are turned into parts of a functional arrangement; To establish geographical groups is now a step on the way to make projects aimed at target groups. Furthermore, the geographical group is an unproblematic frame of the work within the professional groups. And vice versa, the work within the professional groups as well as the work on target group projects are ways to make the geographical groups function. So the three kinds of grouping are mutually enabling rather than mutually exclusive. At any rate that is what the manager argues.

Second, the enveloped object does *not imply immobility*. When the containing object is created, it becomes possible to defer the attention to professional and target groups; geographical grouping can now be worked on without interruption. So contrary to conjoined alterities, which constantly disturb each other, functional parts can be handled separately. The manager's containing object is indeed - as she repeats time and again - a way to move on.

The third difference between the fire-conflict-object and the containing object is that the latter exists in - and performs - a space of *distinct levels*.

Time is levelled: Initially there will be a geographical division and later there will be target grouping. So the present time can be plotted in relation to these two points, which makes it possible to depict the working group as moving forward or standing still. Contrary to this, time was non-existing in fire space; There was no now and later, the conflict between types of grouping was 'eternal' or 'principled'[5].

Another set of levels that is performed by the containing object are the levels of size: Geographical groups contain the other kinds of groups, which means that geographical groups are made big, while the other kinds of groups are made small. This relation of size fits into an elaborate network that establishes relations of size between entities in the social work administration. Each geographical group is a part of the adult team, which is a part of the local centre, which is a part of the Family and Labour Market Administration. Again, this is entirely different from fire space. In that spatial configuration

[5] The literature on organisational structure often makes a similar performance. Differences between organisational forms are depicted as an 'eternal' and 'principled' conflict. One particularly clear example of this is Mintzerg's (1983) discussion of functional grouping vs. market based grouping. "We have the fundamental distinction between grouping activities by ends, by the characteristics of the ultimate markets served by the organization (..) - or by the means, the functions (..) it uses to produce its products and services" (p.54).

the conflict was performed as a point of impact between two clashing entities. But the size of those entities was not a part of the reality constructed in fire space; or to be more precise: as soon as more and more entities enlisted as allies to the geographical option, and this option thus seemed to grow, the spatial configuration shifted toward network space.

So in sum, the object of the articulated conflict in fire space was thoroughly changed in its encounter with network space. First it was cut down from three to one option by the evocation of an extended network of management. Second, it was translated into a 'containing object', which is functional rather than conflictual, and mobile rather than immobile. Moreover this new object exists in a space of differences in size (as opposed to a conflict that is 'fundamental' or 'in principle') and in a space of differences in time (as opposed to a conflict that is 'eternal').

Translation of Objects from Network Space to Fluid Space

Following objects from network to fluid space presents a particular challenge. A fluid object is hard to identify and describe because it doesn't retain a fixed set of relations. It constantly moves, adjusts and incorporates new elements. However, as Mol and Law also point out, the continuous and gradual change is precisely what makes fluid objects robust.

"In fluid spaces objects don't collapse easily. But why? Maybe it's because there is no single strongpoint to be defended in order to preserve continuity. Like guerrilla armies, fluids melt back into the night. They circumvent. They infiltrate. For since continuity has nothing to do with the integrity of territory in a fluid space, there are no fixed frontiers to be patrolled. Neither is there need for police action to safeguard the stability of elements and their linkages - for there is no network structure to be protected." (Mol & Law, p.662)

To carry on with the guerrilla-metaphor, I will suggest that encounters between fluid space and network space do not take the form of dramatic battles over strategic positions in the network. Quintessential network-objects such as the notion of teamwork as cross-professional collaboration or the geographical grouping are not cut to pieces all at once but rather chipped away by a series of rather uneventful events. This state of affairs has made me deviate from the format, which I have employed in the previous paragraphs. In the following, I will *not* identify a particular object and then track it into a different kind of space. The idea of one strategic object makes little sense in a discussion that involves fluid space. Instead, I have chosen to structure this paragraph around three stories. Each of these exemplifies the erosion of network objects and the incorporation of network debris into fluid space.

First story: Familiar faces

As a part of my contract with the FLMA, I agreed to write a couple of reports with preliminary analyses of my observations. One of these reports had the literary format of a critical implementation study; I listed the initial political goals of the team project, I described a series of power-struggles between managers and social workers on the local level, and I concluded that next to nothing had come out of the project. Obviously, the teams had been made in the formal organisational structure, the professional groups had been mixed in the geographical group meetings, but no actual cross-professional collaboration had been established, and no clients had been given a single contact person as a result of the project. Furthermore, I pointed out that only 5% of the working hours were spent in geographical groups. 95% of the time, everybody worked exactly the way they did before. To put it shortly, I was claiming that the intention of the team project was to build a network, with certain relations and effects, which were all predefined by the official project goals. And this project had failed dramatically.

The members of my steering committee were not particularly happy with this analysis. Several members including the team manager pointed out that the team project must be seen in a longer time perspective; no one has claimed, they reminded, me that all the political goals would be realised within half a year. Of course, they were right. Using the terms of the present text, I would say that the managerial network may have failed for a moment to discipline a number of allies, but it has certainly not disappeared as a mode of ordering.

The second, and to me even more interesting response came from a social worker (a support person). She said that I was wrong to say that nothing had come out of the team project. “The co-operation in the individual cases is easier now that we know the faces of the caseworkers”. In the spur of the moment, I took her comment to be rather insignificant. But, I now believe that this was due to my preoccupation with the evaluation of network space. My focus on the official goals made the significance of her point invisible. The social worker pointed to the fact that the support persons’ ad hoc work is much easier if they know the caseworkers, with whom they will co-operate *before* the cases become urgent. What this entails in practice, I can only speculate. It could be that it is easier to get down to business quickly with someone who is not a complete stranger. It could be that knowledge of procedures and possibilities from previous cases may be reused. It could be that familiarity makes it easier to drop by and make an informal inquiry. But all of this is, as I said, speculation. However, it is quite evident that the familiarity, which is productive in the *fluid* space of ad hoc work, is in part an effect of the efforts to construct a *network* of cross-professional collaboration. The placement of the four professional groups in adjacent offices in the same

building is a direct outcome of the team project. The activities of team sessions and geographical group meetings have provided further opportunities to achieve 'familiarity'. In fact these events have forcefully staged the blending and the civil interaction between social workers. So the net-work, which has *so far* been unsuccessful in its own terms, has actually fed some measure of success in fluid space.

Second story: "I did real teamwork today"

As a part of my fieldwork, I was invited by the co-ordinating home-helper to follow her work for a couple of days. An important part of her job is to enter new clients into the system. This is done by visiting their home, evaluating their needs, making an agreement with the client, and finally upon the return to the local centre enter the relevant data into the computerised work plans of the home-helpers. I was invited on a number of these visits and every time the home-helper teased me by saying that she hoped it was a 'really trashy home'. Obviously, she wouldn't mind shocking this innocent-looking young man from the University a little bit.

On one of our trips, we visited an alcoholic, who had been hospitalised after a serious binge. He was now on Antabuse[6], he had been discharged and he was back in his apartment. When the man invited us into his apartment, we were surprised to find it clean, in fact very clean. In the ensuing conversation with the home-helper, he told his story. At the hospital, he wasn't allowed to make a slow withdrawal; he was forced to take a 'cold turkey', which was a horrible experience. Now that he was on Antabuse, he felt extremely restless and he had trouble sleeping. He couldn't hang out with his old friends, because they were all drinking. So what he had done for the past couple of days was to channel all his energies into cleaning the apartment. The home-helper asked him if he had any means of subsistence. It turned out that he didn't. The only money he had was from selling all his empty beer bottles[7]. She told him that he was definitely eligible for supplementary benefits. He just had to visit the local centre and fill out an application. The man seemed a little confused and hesitant about this, but then she offered that he could walk back to the local centre with us. And so we did. At the local centre, the home-helper directed us to the service team, a team adjacent to the adult team, which is in charge of the so-called lighter cases. The home-helper contacted one of the caseworkers and got the right application form. She instructed the man to fill in the form, and explained that he would have to wait in the line to have it processed. The

[6] Antabuse is a drug used in the treatment of alcoholism; causes nausea and vomiting if alcohol is ingested.

[7] There is a refund on empty glass bottles in Denmark.

home-helper and I said goodbye to the man, and we walked back to her office. Later that day, I heard her tell about the episode to a colleague in the hallway. She initiated by saying: "I did real teamwork today".

I have little doubt that the home-helper's comment to her colleague performs teamwork as something worthwhile pursuing, as *a good*. However, I could interpret her actions with the client in some very different ways. If I wanted to be optimistic on behalf of the team project, I could say that the home-helpers action was caused by all the talk about teamwork in the past months. If I wanted to be pessimistic, I could say that she possibly would have followed the man to the right office in the local centre regardless of the team project[8]. But no matter which interpretation, it is hard to deny that the home-helper *talked* about teamwork as a good. So the value or ideal or morality of teamwork is, at least in this instance, incorporated into the social accounting of the ad hoc work. This entity, the good of teamwork, is another case of an object, which is generated within the managerial networks of official goals and organisational designs, and which is now incorporated into the fluid space of daily ad hoc work.

As an almost ironic twist to this story, I might add that the 'teamwork' performed by the home-helper is completely *invisible* in the network space of the managerial efforts. The home-helper links a potential home-help client to the caseworkers in another team. This work cannot be located in one of the geographical groups of the adult team, because it doesn't involve group members other than the home-helper. The work is also invisible to the official or managerial contacts between the adult team and the service team because these contacts focus the division of big 'chunks' of work such as a group of cases or a type of administration. So the 'real teamwork' of the home-helper draws on an idea that is generated and distributed in network space. But at the same time, it transgresses the boundaries created by networks (such as geographical groups), and it undermines the idea that the boundaries created in network space can actually contain the 'real' teamwork. Thus, teamwork is made a fluid object.

Third story: The notice board

During my fieldwork with the caseworkers, I sometimes borrowed an empty office, where I could sit and read some case files. On one of these occasions, I raised my head from the files and took a closer look at the large notice board, which covered the wall over the desk. The board was filled with papers neatly organised in rows, creating an almost matrix-like formation. In one of the top

[8] I might even be cynical and say, that she may have acted the way she did because she was followed by an observer with a proclaimed interest in the team project.

corners, there was a children's drawing of bird. In one of the bottom corners there was a paper produced by the managers working group: a spread sheet showing the number of clients in the geographical group, which the caseworker in this office had been allocated to. The number of caseworker clients in the group was around 1000. On the sheet, the number of clients in the other professional groups had been circled and the following note had been written: "others about 80 clients". On the rest of the notice board, i.e. between the spread sheet and the children's drawing, there were lists of phone numbers to medical doctors, solicitors, treatment institutions and shelters. There were official announcements describing new divisions of labour between offices in the central administration. And there were lists of computer codes, processing deadlines and rates in relation different kinds of supplementary benefits.

This notice board is yet another example of how a 'network' entity, the working group's spread sheet, is incorporated into a different space. One could say that the spread sheet on the notice board *represents* the team project. But I would argue that the team project is also *performed* in certain ways by the notice board.

At particular times, such as the team's introductory meeting at the FLMA, the team project was spoken of as something big and all-encompassing; "This project will change the 'whole' administration". Contrary to this, the notice board performs the team project as something *small*. The spread sheet is not larger than any of the other pieces of paper, and the hand-written comment by the caseworker suggests that the geographical group only concerns 8% of her clients.

Furthermore, the notice board performs a reality in which *change is ordinary*. The papers indicate that procedures, phone numbers, division of labour get changed all the time; the team project is just another element in this flow of changes. This also departs from the prevalent managerial stories about the project, which describe the changes in relation to the team project as highly extra-ordinary. One consultant even told me that he regarded the team project as the biggest change in social work in Copenhagen in this century.

The notice board also performs the team project as *manageable*. It orders and displays the changes, it makes all of them visible from the caseworkers chair. It makes it possible for the caseworker to fit the team project into a stream of daily activities.

Finally, I will suggest that the notice board *detracts from the importance* of the team project. I have already mentioned how the spread sheet is performed as a manageable case of ordinary change. But perhaps the children's drawing

makes an even more effective, albeit subtle, deconstruction of the importance of the team project. The drawing simply suggest that there are other important things in life than administrative work.

I have now recounted three stories about the translation of objects from the network space of the 'official' team project to the fluid space of ad hoc work. There are two conclusions I would like to draw from these.

First, it appears that when the network-objects are translated into fluid space they tend to become *invisible*, or to be more precise: invisible in eyes crafted by network space. Easier ad hoc work because the social workers know each other, casual accounts of real teamwork in the hallways, one-off cross-professional contacts, pragmatic handling of 'dramatic' changes. All of this is invisible, because it moves around the focal points generated by the managerial network; It does not appear on the averaged and accumulated group-scores in the Team Profile®. It does not pass through the 'obligatory' passage point of the geographical group meetings. And it does not appear when an outsider such as myself evaluates the official goals of the project.

Second, I have pointed out that the translation of objects into fluid space has an *erosive* effect. The obligatory passage point of the geographical groups are made less obligatory, when ad hoc collaboration becomes more efficient, and when contacts that circumvent the official forums are referred to as 'real teamwork'. It is not that the ad hoc work directly confront the geographical groups, it is rather that these kinds of work gradually undermine the importance and usefulness of the geographical groups. The fluid work doesn't block the main road paved by the manager, and it doesn't try to reverse the traffic. But it opens a multitude of secondary roads, which gradually dries out the traffic on the main road. Over time this makes the main road look superfluous, oversized and out of touch with the real action.

Conclusion: The Shapes of the Team Project

I have now followed a series of objects and their translation into different kinds of space. Through this I have generated a list of some of the shapes, in which the project ends up.

In regional space, there was the object of the expert. When it moved into fire space, the expert was sometimes cut by the intersecting network of citizenship. At other times it was translated into the a civil servant, rendering invisible the links to the established areas of expertise. And in rare moments, the expert was performed as a part of the trading zone of an expert-dialogue.

In fire space, there was the object of an articulated conflict, a conflict between three different version of grouping. When moved to network space, this object

was cut or intersected by a network of managerial rights. And following this, the conflict-object was translated into a containing object with one version of grouping engulfing the two others.

And then there were the objects of network space, such as the geographical groups and the notion of teamwork as cross-professional collaboration. When these objects encountered the fluid space of ad hoc work, they were gradually disfigured and translated into something smaller, more ordinary and less important than the team project which was performed in network space.

In the figure below, I have made a summary of the objects and the movements which I have described in this chapter.

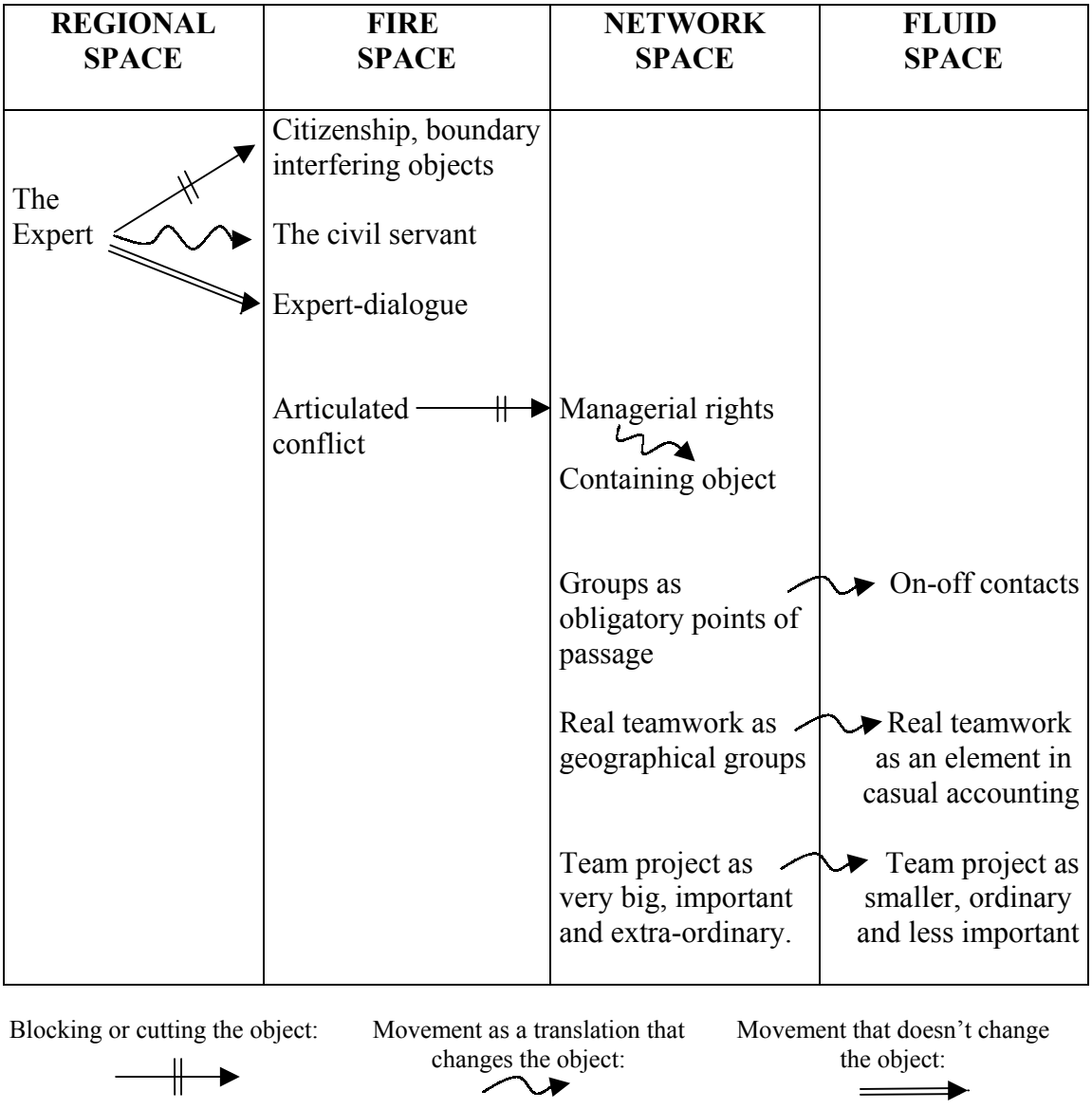

Figure 9. The movement of objects between spatial configurations

But what does this list of objects and movements tell us about the team project? What struck me, as I wrote the pages of this paragraph, was that the objects, which are translated between the spatial configuration are so cardinal. We are not dealing with trivial, insignificant objects but rather entities which are crucial to the constitution of the various spaces. Regional space without experts is hard to imagine. Fire space, without the tension of a conflict makes little sense. A network space without some measure of obligatory passage points and fixed functional relations will collapse. So my argument is that the objects, which were moved in the course of the team project were neither incidental, peripheral nor insignificant to the spatial configurations. Quite the contrary.

This cardinality of the objects is of course an artefact of the way I initially framed this chapter. My intention was to pick out quintessential objects and follow their translation, and so I did. But then the surprising thing is that it was so relatively easy. Central objects such as the expert, a conflict over grouping and the notion of real teamwork are not the exclusive property of a single spatial configuration; they are translated and they are moved. The point I am getting at is about the closure or rather the lack of closure in the configurations. When 'quintessential' objects are incessantly translated from one configuration to the next, then it follows that the configurations are not closed in on themselves. On the contrary, they are constantly being related to their others.

If I were to put the same point in *regional* terms, I would say that the exchange of objects does not just take place in a circumscribed trading zone, which leaves the mother countries separate and untouched. To the contrary, the translation of objects makes links from the heart of one region to the heart of another. And through this, the homogeneity of the regions are constantly disturbed[9].

To draw a metaphor from Clifford Geertz's classical analysis of Balinese cockfights, this is not a shallow game; it is *deep play*. The parties are in over their heads. Statuses are jeopardised. But, and this is the other aspect of Geertz's play metaphor, the status affirmations or insults are only symbolic. In a Balinese cockfight no one[10] gets seriously hurt. And this I believe is also the case for the fight between spatial configurations in the social administration. Even though the objects, which are translated and moved, go the heart of each spatial configuration, these configurations are neither

[9] Which in turn means that is hard to maintain a regional metaphor if this image hinges on the homogeneity of regions.
[10] Except for a very few cases of addict gamblers, and then of course the cocks.

eradicated nor made to disappear. Regions, fires, networks and fluids constantly regroup and continue the fight to order the world their way.

It may seem that I am contradicting myself here. One the one hand I am saying that there are deep translations of objects which go the hearts of the spatial configurations. On the other hand I am saying that spatial configurations are somehow unchanged. How is this possible? I think the answer is quite simple. It is related to the way I have been writing about the team project: the literary format of a project story. I have narrated a sequence of events, and by doing this I have performed the idea that the something, which I have been following, is 'a' thing or even a thing in its entirety. As if the team project were a singular reality, which only played itself out under my magnifying glass. But, evidently I don't take that to be the case. The spatial configurations that I have depicted in my analysis of the four cases, are in no way exclusive to the team project. They are, or so I claim, performed on numerous other occasions and in many other materialities than the ones I have described here. For that reason, the spatial configurations remain relatively obdurate despite their relatively deep transformations in the course of the team project.

Chapter 7

Conclusion - the Temporary and the Obdurate

In this chapter I will begin by summarising the argument and the theoretical leitmotifs of this thesis. Following this I will discuss some possible theoretical and methodological implications of the analysis of the team project.

A Summery of the Argument

In the introduction, I suggested a constructionist approach to a study of the development of competence in the team project. This implied attention to a plurality of orderings and to the heterogeneity of these orderings. My express aim was thus to describe competence as a series of 'programs', which extend themselves by adding 'loads' of humans, words, tools, material, texts, machines, etc. With this agenda, I committed myself to a complexification strategy, that is the investigation of competence as an effect of a texture of relations rather than an underlying essence.

In the second chapter, I discussed the work of combining a heterogeneous lot of observation data into a coherent account. Through a case study, I depicted the construction of facts in social science as empirical-ontological tinkering and net-work, which involves particular methods and inscription devices. Based on this analysis, I argued that (constructionist) analyses should build on a plurality of data types and that it might be fruitful to include a plurality of ontological constructions within the text.

In the third chapter I embarked on a discussion of the most prevalent way to inscribe change processes in psychology, namely the concept of learning. I presented a number of learning theories and I argued that they all depend on a notion of an adapting learning system. Furthermore, I argued that the premises of these learning systems are untenable. The boundaries of the learning systems - whether based on the content of learning, the agent, or the location - are leaking. For this reason, I (once again) suggested a move to the metaphor of the network and the perspective of ANT. The virtue of this material-semiotic approach that it makes an analysis of negotiation processes possible without a priori assumptions about the essences and boundaries of the actors. However, criticisms has been raised over the alleged

'managerialism' of the approach. ANT seemed - at least in the eighties - to focus almost exclusively on the construction of centredness and coherence. However, decentredness and incoherence have been brought strongly into focus by recent work by ANT-inspired or 'after ANT' authors. This second wave in science and technology studies has been called the *performative turn*.

In the fourth chapter I explored the concept of performance through some works by John Law and Annemarie Mol. I argued that in very abstract terms, the performative turn works by asking what kinds of differences there are and how they get related? However, the theoretical and empirical answers to these questions vary considerably. Law talks about different modes of ordering. Mol & Law talks about different topologies or spaces. Mol talks about the multiple performances of an object. But regardless of the specific kind, performances can be defined as recursive processes, which are unbounded and materially heterogeneous.

In the fifth chapter, I use the notion of performance to discuss a series of events in the team project. This is summarised at the end of chapter five and the key terms are repeated in the table below.

Case no.	"Modes of ordering"	Spaces	Maintaining work/ transition work
1	Social work performed as: Political, statistical, user-functional, professional.	Regions	Staying on home ground Offering expert-opinions Avoiding region-spanning objects.
2		↓	Detaching social workers from regions Bringing differences together
2	Conflicting versions of due process: Agora, informed management, expert-dialogue Conflicting versions of division: Professional, geographical, target group division	Fire	Articulating and juxtaposing differences Creating opportunity-charged space Gathering facts
3		↓	Making a difference between alternatives Interessement Deferral
3	Deferral, vision, calculation vs. Paralysis, labour of division, worries	Network	Keep disturbing others away Disciplining actors Rationalising the network reality Mobilisation Obligatory points of passage
4		↓	Finding other ways, i.e. by-passing the obligatory points of passage
4	Complicated relations between: Geographical division, Team Profile®, team stage, benefit of the users, function of geographical group meetings, professional groups.	Fluid	Dismantling foreign elements Incorporating debris Ad hoc work

Figure 10. Key terms in the analysis of spaces and modes of ordering

In chapter six, I identified a number of objects and followed their translations from one spatial configuration to another. First, I examined the regional object of *the expert* and its translation into fire space. At one point it was cut by an intersecting network of civility; the notion of free and equal individuals was mobilised against the linkage between experts and their areas of expertise. At another point the linkages between areas of expertise and social workers were troubled when they were demanded to make a common decision on a matter that could not be dealt with in a pigeonholing fashion.

At a later point, the figure of the expert was translated into an actor in the performance of informed managerial decision making. In this process, the professional opinions were turned into facts by silencing their circumstances of production.

Finally, one of the social workers suggested that proper decision making should take the form of a dialogue between experts. However, this type of translation from regional to fire space did not gather very much support.

The second object, which I followed, was the fire object of an *articulated conflict* between three options. In network space, two of the three options were (under)cut through the mobilisation of a network of managerial rights. Later, the conflict was transformed in such a way that the remaining option engulfed the two others. A network object containing the differences within was thus created.

A third group of objects made their way from network space to fluid space. Through an erosive process the objects of network space were dismantled and incorporated into the fluid ad hoc work of the local centre. In this way, network objects such as the *geographical grouping*, *the notion of real teamwork* and the *size, importance and uniqueness of the team project* were gradually circumvented and deflated.

A Summary of the Theoretical Leitmotifs

I have now made a summary in the form a stepwise recapitulation of the argument. Another way to summarise is to indicate some of the theoretical *leitmotifs*, which run through the text. This is what I will do next.

From discovery to construction

Post-Kuhnian science studies have challenged the traditional epistemological account of science as a process of discovery. Through historical and empirical studies of scientific practice, it is argued that scientific facts are outcomes of negotiation processes, which include numerous non-methodological and mundane elements (Knorr-Cetina, 1995). The view that emerges from these

studies is that the work of science is about ordering, persuading, manipulating and disciplining a number of entities into playing particular roles in a network. Only when this network is stabilised, will a scientific fact 'emerge'. And only when the construction and negotiation processes have been forgotten or silenced, will the fact appear to be a 'naked' fact. In the present text, I have drawn on the field of science studies with my notions of empirical-ontological tinkering and ontologies as inscription devices. Furthermore, I have attempted to write my account in a way that displays rather than conceals my own construction work.

From singularity to multiplicity

A frequently used point of reference in sociological theory is Parsons' structural functionalism. This distinctly modernist theory presumes the existence of a social order in the form of a grand system, which maintains itself through the socialisation of its individual members. A host of theoretical traditions have challenged this view. Among these ethnomethodology, symbolic interactionism, feminism, and post-structuralism. All of these presume and articulate 'order' as a temporary, precarious, impure, and locally accomplished phenomenon. The present text follows this mode of analysis by attending to a multiplicity of performances.

From sociality to heterogeneity

One of social science's greatest challenges is to move beyond "the social". What a social administration can do, its competence, should not be reduced to human meaning-making, sociological factors or some combination thereof. An analysis of the social must find ways to include the materialities of the world. There are of course many way of doing this including the sociotechnical system theory in organisation science and the focus on production by Marxist sociologies. However, what has inspired me here is the material-semiotic approach of actor-network theory. This theoretical approach attempts to build an infra-language for a study of relations between entities of all kinds. The study of network thus becomes the study of processes of hybridisation of the social and the material. In the present text, this is manifested in my commitment to a complexification strategy in the study of competence. Nothing can, I assume, be understood without attention to its web of relations. More specifically, the ANT-approach has inspired my continual attempts to describe performances as heterogeneous arrangements of furniture, texts, bodies, talk, papers, case files etc.

From systems to performances

Very broadly speaking I might link myself to a tradition of process philosophy, which presumes that processes are primary to substances and that events are internally related to their outside worlds (Gregersen; Whitehead). This means, in Latour's (1996a) interpretation, that it is illegitimate to theoretically assume the existence of certain ontological scales, such as individual-family-class-society or caseworker-adult team-team project. The 'size' of things is a matter of what can be drawn together and what can be made to speak on behalf of what in a particular instance (Callon & Latour 1981). Furthermore, Callon (1999) and Law (2000) argue that the ontological stabilities or framings, that are in fact achieved, will inevitably be subject to overflows. In the present text my commitment to process philosophy is evidenced in various ways. The attention to the overflows of 'ontological givens' is my chief argumentative strategy vis-à-vis learning theories. This led me to the most significant theoretical resource in the present text, the concept(s) of performance. Performance is, I suggest, a way to talk about processes, relations and orderings without recourse to assumptions about essential ontological levels given in the order of things. Performance is thus my vehicle for doing empirical process philosophy.

Decentering competence

A fifth leitmotif of this dissertation is the continual attempt to decentre competence. These efforts are inspired by post-structuralism and by the widespread interest in 'situatedness' in contemporary social psychology. In the introduction I mentioned 'purifying' theories of competence, which assume that competence is an ability located in the individual. This notion has been strongly criticised by social learning theory that distributes competence to the productive relations between a human subject and his or her community of practitioners. I agree with social learning theory in this move toward a more relational or complexifying notion of competence. However, following actor-network theory, I take the decentering one step further by distributing the sources of agency to non-human actants as well. With this move competence is no longer a social psychological notion but a broad conception of how entities, human and non-human, get connected. Although ANT radically decentres the sources of competence it is primarily interested in centred effects such as durable facts, technologies or centres of calculation. Some of the sympathetic criticisms of ANT suggest that decentering may be carried even further. It may be that competence is a widely distributed texture of differences that are never added up or drawn together in a single point. This is the possibility that I have tried to articulate through the analysis of performances of the team project.

Theoretical Implications - Thinking about Difference

The question, which I now want to grapple with, is what to do with all this. Which lessons can be drawn from the 'performative' analysis of the team project, what is there to conclude?

I have surely articulated a host of differences in the team project: modes of ordering (mini-discourses), spatial configurations, and the different performances of objects. I have also articulated a number of ways in which these differences are related. I have argued that several modes of ordering are somehow joined in the performances of particular spatial configurations. I have argued that spatial configurations 'feed on' each other and more specifically I have described this 'feeding' as a number of deep translations of objects.

If this is our story, then how can we think about this in more general terms? In the following I will engage with a series of metaphors in order to get a grip of what to make of the related differences in the team project.

Function

One metaphor, which I have already taken up and discarded, is that of function. I have argued that the different spatial configuration *cannot* be thought of as steps in a chain of production. There are two reasons for this. First, the move from one configuration to another does not translate the latter into a faithful ally of the former. The process is rather one of breaking up and dissolving the former configuration with the consequence of making room for the latter. The second problem with the functional metaphor is that it implies that 'earlier' configurations disappear or become unimportant. But this is not the case. In fact the terms new/old or earlier/later seem of little value. No spatial configuration seems to be eradicated in the course of the project. Their successes as well as their setbacks are only momentary.

So a conclusion, which *doesn't* work, is this: The team project went through a series of steps, which all ended up in the production or feeding of the fluid space. A conclusion that does work is this: Several different spatial configurations were performed in the course of the project. There was substantial tension and "mutual feeding" between these configurations and there still is.

Endangered species

Another family of metaphors would be ideas about the intrinsic value of differences. Cultural relativism is one. The discourse on biological diversity and the protection of endangered species is another. Applying these metaphors, I might conclude by celebrating the sustenance of differences. I

might say that one life form (managerial networks) at some point threatened to drive out the natural variation, but luckily the other species (professional fluids) managed to find new niches, so that a the eco-system is now able maintain its high level of diversity. So although some of the infighting was savage, the team project was, at the end of the day, a happy case of sustained co-existence.

By talking about the team project in this way, I would imply that the preservation of differences is an inherent good. But this is not a position I want to take. I frankly admit that I cannot offer a brilliant design for a better social administration, but this does not persuade me that it is a good in and of itself to preserve the existing social administration.

This leads me to a second (productive) objection to the endangered-species metaphor. By talking of the team project in this way, it seems that there is something - fixed species - that can be preserved. The opposite ontology, would be one of a gradual flow of mutations, aberrations, and variations, which over time changes the 'essence' of what there is. I would like to position my own account within this latter view. Bear in mind that I called the spatial configurations *snapshots*, not stages or structures.

So now I have another conclusion that does *not* work: The team project was a happy case of sustained pluralism. And a conclusion that does: The team project was a case of sustained pluralism.

Hybridity

A third family of metaphors is trying to say two seemingly contradictory things at once: On the one hand there are incommensurable differences, on the other hand there are profound interdependencies, or mutual implicatedness between these differences[1].

The performative turn makes arguments of this sort. Annemarie Mol describes how anaemia is performed very differently in the clinic and in the hospital laboratory (see chapter 4). But then she points out that difference does not necessarily mean separation. In fact, the laboratory performance *includes* the clinical performance; the statistical norm, which is the centrepiece of the laboratory performance, depends on a clinical screening of the individuals, which were used as a norm group. So the apparently pure forms turn out to be mixes.

[1] This way of thinking can be fruitfully distinguished from regional metaphors such as Star & Griesemer's notion of social worlds connected by boundary objects, or Galison's idea about trading zones as third places separated from the established fields. With regional metaphors the differences are taken to be essential rather than dependant on their others.

Bruno Latour's "We have never been modern" (1993) is another case in point. In this text he claims that the so-called modern era is characterised by incessant attempts to separate the world into two kingdoms; Politicians, social scientists and psychologists define a realm of human culture, whereas natural scientists and engineers define a realm of non-human nature. However this separation, which Latour dates back to the 17th century, appears to be highly questionable if one reads a modern newspaper. Stories about the hole in the ozone layer, AIDS, global warming, and other recent issues constantly weave the social and the natural together. "The same article mixes together chemical reactions and political reactions. A single thread links the most esoteric sciences and the most sordid politics, the most distant sky and some factory in the Lyon suburbs, dangers on a global scale and the impending local elections or the next board meeting" (ibid. p.1). Based on this seemingly paradoxical divergence between the clean ontological realms and the messy stories, Latour argues that our contemporary world is characterised by two sets of processes. On the surface, there are processes of purification into the human and the non-human. This is the hallmark of modernity. Down below there is an increasing hybridisation of elements, which produce ever more encompassing and powerful networks. This hidden hybridisation reveals that we have never really been modern; the separation of the human from the non-human is an illusion, which has never been put into practice.

In a critical comment on Latour, Mark Elam (1999) suggests that arguments about hybridity are unlikely to wave away ontological distinctions. Elam points out that the notion of hybridity has a very particular history. I didn't become prevalent until the 19th century and at that time,

> " [i]t came to signify some of the worst anxieties plaguing British imperial power and embodied some of the colonizer's most secret fears and desires. It reflected then and continues to reflect today (..) a broad-ranging concern with the interbreeding of species as well as an engagement with anything derived from heterogeneous or incongruous sources. Therefore, the history of hybridity is the history of combinations conceived in a particular fashion; combinations conceived, first, during the course of colonial expansion; combinations often thought absurd, unnatural and dangerous, but still potentially profitable; combinations associated with the forcing together of unlike living things, the grafting of one species on to another, and the wilful manipulation of difference into sameness; the construction of a sameness which if not properly tended will soon revert back into difference" (ibid., p.14)

Elam argues that hybridity can be contrasted to 'amalgamation', which is the idea that different species can be interbred and create mixed races. In opposition to this, the hybridity-view claims that the mixtures will inevitably fall apart. The different races are so to speak living within the bodies of hybrid individuals. Furthermore the hybridity-view claims that interbreeding will inevitably lead to infertility, if not in the present generation, then in one of the following (Elam, p.14).

So here we have a notion of hybridity with a series of connotations: The mixing of differences, the carrying of difference within, questionable fertility, and the potential of breaking up into the original forms[2]. This extended version of the hybrid-metaphor, suggests that it is an empirical question whether things are in fact amalgamated or whether they will break up into 'original' forms.

From this I can draw another conclusion about the team project: The project was a case of interbreeding, which created a series of hybrids with questionable stability.

Temporality

With the notion of hybridity, I will take another look at the mixing of differences in the team project. I have discussed this mixing under two rubrics; the types of work that produce movement between the spatial configurations and the deep translations of objects. From this I can produce the following list:

Regions ➞ fire

1. Movement work: The detachment of social workers and the articulation of different ways to group the team
2. Deep translation: From expert-object to a civil servant object.

Fire ➞ network

3. Movement work: The making and increasing of a difference between the articulated options.
4. Deep translation: From articulated conflict to a containing object

[2] Elam points out that there is a profound ambivalence to the notion of hybridity. Does hybridity suggest the creation of a new world of mixtures, or is it actually a way to defend an old world of established essences? (ibid. p.15)

Network ➞ fluid

5. Movement work: The making of alternatives to the obligatory point of passage.
6. Deep translation: Translation of "real team work" into on-off contacts outside the realm of geographical groups.

I think, there is one common characteristic to the elements on this list. None of the 'tactics' above last for very long. They are all *temporary*.

ad 1. The detachment of the social worker can only go on for one day.

ad 2. The discourse of 'facts' and 'civil servants' will give way to 'politics' and professional interest after a while.

ad 3. The predominance of one option can only be sustained for some period of time.

ad 4. The geographical solution can only contain the other options for the time being.

ad 5. The alternatives to the obligatory passage point can only live as occasional exceptions.

ad 6. The subversive definition of 'real team work' can exist in a rare moment, but it is never likely to become institutionalised.

What this suggests, is that the team project comes with a flood of temporary arrangements, which makes it possible to momentarily combine or live with the differences between the spatial configurations. Despite the profound differences between regions, fire, network and fluid, these 'blocks' never collide in a fatal way. They co-exist because their encounters are greased by a number of short-lived but efficient arrangements.

This suggests an alternative explanation for the obduracy of old, big, and bureaucratic organisations like the social administration in Copenhagen. The administration is not, as organisational structure theoreticians would have it, 'low' on innovation. The social administration may be low on *durable* innovations, but it seems to be rich on *ephemeral* ones.

Latour's hotel manager revisited

With this argument, I will revisit Latour analysis of the hotel manager and his loaded keys. In construction stories of Latour and other STS-authors there seems to be a strong focus on durability. Of course STS is concerned with science in the making, and this tradition has produced wonderful descriptions of the initial weaving of fragile threads. However, the recurrent point of these stories seems to be that what is interesting and what needs to be explained is the end-point of hard and durable facts or technologies. The interest in the soft and the fragile is only justified by what they later amount to.

The story of the hotel manager thus ends at the moment he manages to impose a durable discipline on his guest through the association of hard metal blocks. The intermediary steps are exactly just that: intermediary. However, I would suggest that soft, temporary arrangements are in fact important to explain the persistence of "blocks" whether we call these identities, modes of ordering or spatial configurations.

In the case of the hotel manager, it can be argued that the "intermediary", short-lived, un-heroic steps are equally adding to the performance of management and guests. Let us begin by observing that there are certain irreconcilable differences between management and guests - differences that have to be lived with. The manager qua manager has the right to give orders, and the guests qua guests have the right to forget without being punished. But what does managerial rights to order mean if the guests are allowed not to obey? And what does the guests' right not to obey mean if the manager has a right to command? How is it possible to deal with this paradox in real-time?

Let us take the case of the written sign ("Please leave your room key at the front desk before you go out"). By hanging it on the wall, the manager performs himself as someone, who has the right to issue instructions; a guest could not have placed a sign on the wall. The guests on the other hand treat the sign as less than a command and through this they perform themselves as more than foot soldiers of a manager-general; an employee anxious to keep his job could not have ignored a written sign from the manager.

Is it fair to say that the sign doesn't work? If we compare it to the metal-blocks, which will appear later in the story, the sign seems to do very little work: It doesn't change the behaviour of large numbers of guests. But we might also note that the different performances of the sign make it possible to sustain managerialism as well as guest-ism for while. These two partially clashing isms are affirmed rather than challenged through the temporary encounter around the sign. And for this short period of time they have in fact co-existed.

Let us image what would have happened if the written sign was treated as a permanent and established order rather than a temporary arrangement. Let us imagine that the manager's statement was painted on the wall or carved into it. There are two options, which are both disastrous. If the guests keep ignoring the sign, it will turn into a glaring symbol of the manager's powerlessness. It would look like a law passed by a legitimate government, which is constantly broken by the people. The second option is that the guests should be made obey by any possible means. If people break the law, it is a matter for the police. But if too many people break the law, the society will turn itself into a police state if it insists that the law must be followed. Similarly, the guests would be turned into something less dignified than guests, if the sign had to be enforced by all means to preserve the manager's status as manager. So my argument is that a *temporary* socio-technical arrangement may strengthen the modes of ordering, whereas a *permanent* one may represents a threat. The *durability* of the partially irreconcilable managerial and guest identities are made possible by the *temporary* nature of the socio-technical arrangements. Latour is no doubt right that the hardness of technology is afforded by the forging of technical and social entities into a stable network. Durable society and durable technology is thus two sides of the same coin. However, as my discussion of the temporary arrangements suggest, hard constructions might conflict with other hard constructions and therefore, the durability of stable networks also depends on the proliferation of ephemeral arrangements.

The temporary and the obdurate in social administration

Imagine a social administration busily working in its well-established pigeon holes of expertise. Then imagine the board of directors announcing a team project that in the most radical interpretations would tear down the professional demarcations and develop something completely new. If this was a matter of principle, then one of the principles would have to be wiped out. But in the social administration described in the present text this does not happen. In this administration temporary arrangements are constructed. Arrangements such as simply talking about disagreements in a conference room and simply writing a list of divergent principles on a flip-over. Or arrangements such as the translation of experts into civil servants. In these ways it is possible for a moment to mingle the old and the new, expertise and management, without wreaking havoc. Now imagine that the team manager exercises a host of skills, resources, powers and allies in order to define a cross-professional subdivision of the team. And image that she even succeeds to produce a 'solution' that cuts away and cleans out all links to the existing division of the team. The course would once again be set for disaster from the

perspective of the existing way of doing things. But in this social administration, the manager's solution only appears to be clean and disentangled. In practice it contains the differences that it tries to exclude and in the months following, the solution, which aspires to be a pure order, is chipped away at by the ad hoc work of the professionals. So once again principles are not been settled, but temporary arrangements evolve, which allow the established disorders to co-exist and 'feed on' each other in new ways.

What is the moral of this story? Is it a saddening tale about the deflation of the high hopes for a new and better administration? Or is it an optimistic tale about the administration's skilful handling of differences that would otherwise spell disaster? In the present text I have no answer that will settle this principled question. And perhaps this is exactly what this text does: It allows the two morals to co-exist for a moment rather than bringing the issue to a clean solution.

Methodological Implications - Inscribing the Temporary and the Obdurate

If temporary arrangements are important, then it is also important to figure out how to study them. What are the inscription devices that may be used for this purpose?

In this thesis, I have followed a particular sequence. First, I identified a number of different performances and second I described some temporary arrangements, which translate 'deeply' between the types of performance. The merits of this analysis might of course be questioned. But since the text is not yet in the hands of the readers, I will allow myself to assume that it *is* possible to proceed in this way; it is possible to start with the differences and end with the temporary arrangements. However, I imagine that it is also possible to start with a particular temporary arrangement and then ask which known or unknown performances it goes between.

In the figure below, I have sketched these two methodological procedures. 'Blocks' refer to relatively stable and identifiable types of performances such as modes ordering or spatial configurations. 'Arrangements' refer to temporary techno-social constructions that perform deep translations between the blocks.

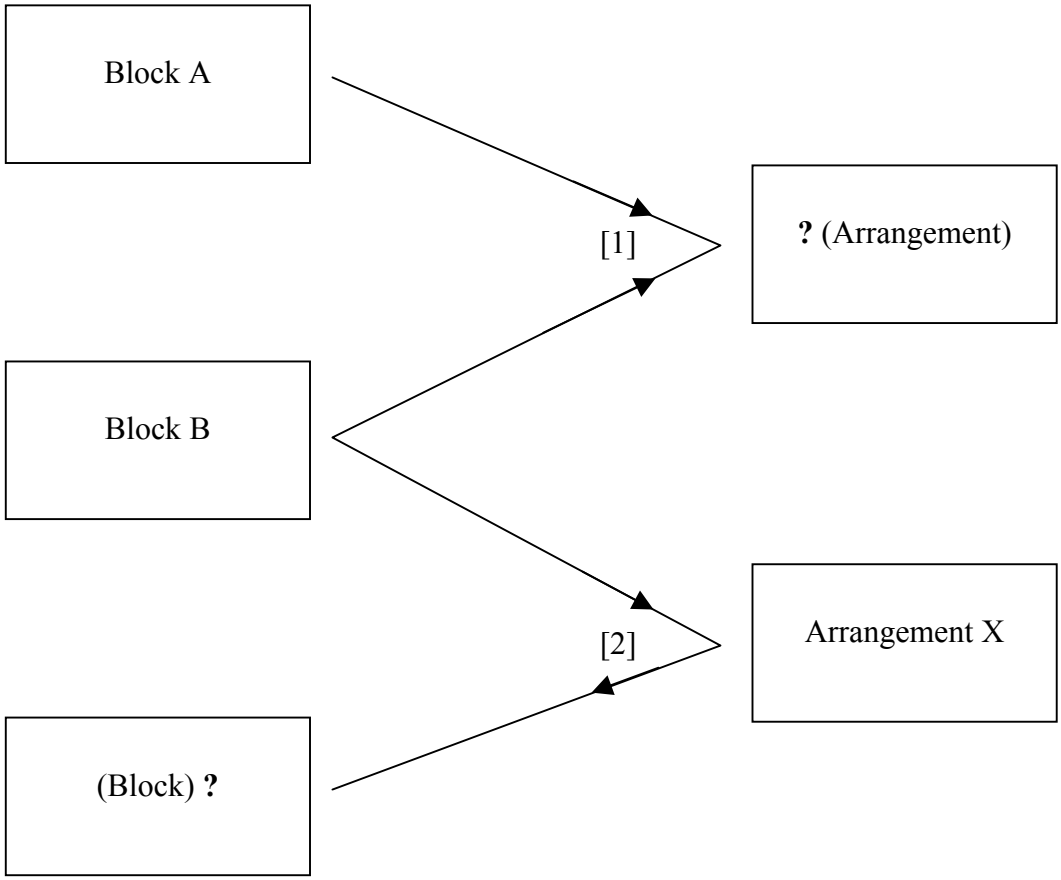

Figure 11. Two methodological procedures

[1] Finding arrangements between blocks
The first step in this procedure is to identify a couple of different performances such as two modes of ordering or two types of space. The second step is to look for temporary arrangements which are go-betweens[3]; one method is to look for work that produces *shifts* between the performances, another method is to *follow objects* as they are moved or translated from one 'block' to another.

[2] Finding blocks through arrangements
In this procedure the first step is to describe a particular performance and the second step is to identify a temporary arrangement, which is somehow related to this performance. The question is now, *why the arrangement is temporary*? What kind of collision would occur if it were made permanent? And what

[3] I borrow the notion of the go-between from David Turnbull, who has discussed this figure at length in relation to colonial Australia (Turnbull, 2001).

kind of 'other' would the first performance be colliding with? This line of questioning is thus a heuristic for finding additional performances.

The zigzag line in the middle suggests that the search for arrangements and block can be thought of as process of ontological-empirical tinkering. The description of some entities can be used to raise more questions, order more data, and construct more ontologies. This vaguely sketched program of research is thus a way to keep moving in the exploration of performances, tensions between them, and ways to live with this tension. It is also a way of investigating competence without making a priori assumptions about the actors.

Living With Tension

The overall conclusion of this thesis has already been indicated. My suggestion is that living in tension is not a matter of finding durable, principled, rational, logical, final *solutions*. It is a matter of establishing temporary constructions, which can be retreated from without doing too much damage.

This suggestion is akin to Hans Magnus Enzensberger's vision for a new type of political leadership written in the magical year of 1989. The old type of leadership, he suggests, was about victory, conquest and triumph. The new type is about retraction, retreat, and 'demontage'. Taking Gorbatjov's deconstruction of the Soviet empire as his prime example, Enzensberger describes the hero of retreat as one, who evacuates positions, bends principles, and leads his people back from a front where they face destruction. The ethos of this hero lies in his ambivalence. The specialist in demontage embraces ambiguity and accepts the losses that he will inevitably sustain. Retreat is, Enzensberger believes, the only type of progress that is possible in the contemporary world.

In the spirit of Enzensberger, I would like to see this thesis as a call for attention to the heroic retreats, which are implied in the *temporary* techno-social arrangements. These soft, ephemeral hybrids never work out to become hard and durable, but my claim is that that is *precisely* why they work.

References

Akrich, M. (1992). "The De-Scription of Technical Objects", in *Shaping Technology, Building Society: Studies in Sociotechnical Change*, Bijker & Law (eds.), 205-224.

Anastasi, A. (1990). *Psychological Testing*. New York: Macmillan Publishing Company, 6th edition.

Andersen, V, - Illeris, K. - Kjærsgaard, C - Larsen, K - Olesen, H.S. - Ulriksen, L. (1993). *Kvalifikationer og levende mennesker*, EVU-gruppen, Roskilde Universitets Center.

Bloor, D. (1976). *Knowledge and Social Imagery*, Chicago: University of Chicago Press.

Blumer, H. (1969). *Symbolic Interactionism: Perspective and Method*. Englewood Cliffs, NJ: Prentice-Hall.

Bowker, G.C. & Star, S.L. (1999). *Sorting Things Out: Classification and its consequences*. Cambridge, MA: MIT Press.

Bramming, P. (2001). *Kompetence-i-praksis*, Ph.D.-dissertation, Copenhagen Business School.

Brückner, P. (1979). *Kapitalismens Socialpsykologi*. København: Hans Reitzel.

Callon, M. (1986a) "The sociology of an actor-network: The case of the electric vehicle". In Callon, Law & Rip (eds), *Mapping the Dynamics of Science and Technology* (pp. 19-34). London: Macmillan.

Callon, M. (1986b). "Some elements in a sociology of translation: Domestification of the scallops and fishermen of St. Brieuc Bay". In Law (ed.) *Power, Action and Belief* (pp. 196-233). London: Routledge and Kegan Paul.

Callon, M. (1998). "An essay on framing and overflowing: economic externalities revisited by sociology". In Callon (ed.) *The Laws of the Market*, Oxford: Blackwell Publishers.

Callon, M. (1999). "Introduction: the embeddedness of economic markets in economics". In Callon (ed.) *The Laws of the Market*, Blackwell Publishers/The Sociological Review.

Callon, M. and B. Latour (1981). Unscrewing the Big Leviathan: how actors macrostructure reality and how sociologists help them to do so. In Knorr-Cetina & Cicourel (Eds.) *Advances in Social Theory and Methodology: Toward an Integration of Micro- and Macro-Sociologies* (pp. 277-303). Boston, Mass: Routledge and Kegan Paul.

Callon, M. and J. Law (1982). "On Interests and their Transformation: Enrolment and Counter-Enrolment" *Social Studies of Science* 12: 615-625.

Callon, M. & Rabeharisoa, V. (2000) "Gino's Lesson on Humanity". Paper presented at 4S/EASST Joint Meeting, Vienna, 27-30 Sept. 2000.

Castelão-Lawless, T. (1995). Phenomenotechnique in Historical Perspective: Its Origins and Implications for Philosophy of Science. *Philosophy of Science*, 62, 44-59.

Christensen, J. (1998). *K.K. Steincke : mennesket og politikeren : en biografi*, København: Christian Ejlers.

Collins, H.M. (1985). *Changing Order: Replication and Induction in Scientific Practice*. Chicago: University of Chicago Press.

Collins, H.M. & Yearley, S. (1992). Epistemological Chicken. In Pickering (ed.) Science as Practice and Culture (pp. 369-89). Chicago University Press.

Dansk Industri (1995). *Uddannelse med udbytte - Effektsikring og effektmåling*. København: Dansk Industri.

Denzin, N. (1970). *The Research Act*. Chicago: Aldine Publishing Company.

Dreier, O. (1979) (ed). *Den Kritiske Psykologi*. København: Rhodos.

Dreier O. (1999). "Personal Trajectories of Participation across Contexts of Social Practice". *Outlines*, 1: 5-32.

Dugdale, A. (1999). "Materiality: juggling sameness and difference". In Law & Hassard (eds*.). Actor Network Theory and After*. Oxford: Blackwell/ Publishers/The Sociological Review.

Elgaard Jensen, T. (1997). "Arbejdsnetværk og Kompetenceudvikling". Projektbeskrivelse, Københavns Universitet.

Elgaard Jensen, T. (1999a). "Bruno Latour og Konstruktionismen - en introduktion". Århus Universitet: Center for Kvalitativ Metodeudvikling, *Nyhedsbrev*, nr. 25, 5-12

Elgaard Jensen, T. (1999b). "Konstruktionen af socialvidenskabelige kendsgerninger". *Nordisk Psykologi*, 51(4), 260-278

Elgaard Jensen, T. (1999c). "Kompetenceudvikling i arbejdsnetværk - En undersøgelse af faglighed of samarbejde i et Voksenteam i Københavns Kommune". Midtvejsrapport. København: Institut for Psykologi.

Elgaard Jensen, T. (2000a). "Faglighed som performance". Paper presented at plenary conference on 'sociality'. Department of Psychology. February, 2000.

Elgaard Jensen, T. (2000b). "Kompetenceudvikling i arbejdsnetværk - En undersøgelse af faglige og organisatoriske perspektiver på projektet 'Den brugerrettede forvaltning". Slutrapport, København: Institut for Psykologi.

Elgaard Jensen, T. (2000c). "Lad os afskaffe læringsbegrebet". Paper presented at 11th Conference on Activity Theory. Middelfart, November 2000.

Elgaard Jensen, T. (2001). "The High Impact of Low Tech in Social Work", forthcoming in *OUTLINES.*

Ellström, P.E. (1992). *Kompetens, udbildning och lärande i arbejdslivet*. Stockholm: Publica.

Enzensberger, H.M. (1999). *Zig Zag: The Politics Of Culture And Vice Versa*. New Press.

Galison, P. 1997b. "Pure and Hybrid Detectors: Mark I and the Psi". In Hoddeson, Brown, Riordan & Dresden (eds.) *The Rise of the Standard Model: Particle Physics in the 1960s and 1970s* (pp. 308-37). New York: Cambridge University Press.

Garfinkel, H. (1967). *Studies in Ethnomethodology*. Cambridge: Polity Press.

Geertz, C. (1993). *The Interpretation of Cultures*. United States of America: Basic Books.

Gergen, K. (1995). *Realities and Relationships*. Cambridge, Mass.: Harvard University Press

Giddens, A. (1984). *The Constitution of Society: Outline of the Theory of Structuration*. Cambridge: Polity Press.

Glaser, B. (1978). *Theoretical Sensitivity*. Mill Valley, CA: Sociology Press.

Goffman, E. (1959). *The Presentation of Self in Everyday Life*. London: Penguin Books.

Gregersen, N.E. (1995). "Distinkthedens tænker: Alfred North Whitehead". Published with Whitehead, A.N.: *Religionens Tilblivelse*. Aarhus: ANIS.

Gross, R.D. (1987). *Psychology: The Science of Mind and Behavior*. London: Edward Arnold.

Haraway, D. (1991). *Simians, Cyborgs, and Women*. London: Free Association Books.

Haraway, D. (1997). *Modest_Witness@Second_Millennium.FemaleMan©_Meets_OncoMouse™*. New York: Routledge.

Holzkamp, K. (1979). Den kritiske psykologis overvindelse af psykologiske teoriers videnskabelige vilkårlighed. In Dreier (ed.) *Den Kritiske Psykologi*, København: Rhodos.

Hutchins, E. (1996). *Cognition in the Wild*. Cambridge, MA: MIT Press.

Kirkman, B.L & Rosen, B. (1999). "Beyond Self-Management: Antecedents and Consequences of Team Empowerment". *Academy of Management Journal*, Vol. 42, No. 1, 58-74

Knorr-Cetina, K. (1994). "Laboratory Studies - The Cultural Approach to the Study of Science". In Jasanoff et al. (eds.) *Handbook of Science and Technology Studies*, London: Sage.

Kuhn, T.S. (1962). *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.

Kvale, S. (1994). *InterView: En introduktion til det kvalitative forskningsinterview*. København: Hans Reitzel.

Latour, B. (1987). *Science in Action: How to Follow Scientists and Engineers Through Society*. Cambridge, MA: Harvard University Press.

Latour, B. (1988). "Irreductions". Published with *The Pasteurization of France*. Harvard University Press.

Latour, B. (1990). "Drawing Things Together". In Lynch & Woolgar (eds.) *Representation in Scientific Practice* (pp. 19-68), Cambridge, Massachusetts: MIT Press.

Latour, B. (1991). "Technology is Society Made Durable". In Law (ed.) *A Sociology of Monsters*, Sociological Review Monograph 38, London: Routledge.

Latour, B. (1993). *We Have Never Been Modern*. Brighton: Harvester Wheatsheaf.

Latour, B. (1996a). "Om aktør-netværksteori. Nogle få afklaringer og mere end nogle få forviklinger", *PHILOSOPHIA*, vol. 25/3-4, 47-64.

Latour, B. (1996b). *Aramis or the love of technology*. Harvard University Press.

Latour, B. (1999). *Pandoras Hope: Essays on the Reality of Science Studies*. Harvard University Press.

Latour, B. & Woolgar, S. (1979/1986). Laboratory Life: The Construction of Scientific Facts. 2nd edition. Princeton University Press.

Lave, J. (1988). *Cognition in Practice*. Cambridge University Press.

Lave, J. (1997). "Learning, apprenticeship, social practice". *Nordisk Pedagogik/Journal of Nordic Educational Research*, Vol. 17, 3.

Lave, J. & Wenger, E. (1991). *Situated Learning: Legitimate peripheral participation*. Cambridge University Press.

Law, J. (1994). *Organizing Modernity*. Oxford: Blackwell.

Law, J. (1997) 'Traduction/Trahison: Notes On ANT' published by the Department of Sociology Lancaster University at: http://www.lancaster.ac.uk/sociology/stslaw2.html

Law, J. (1999a). "The Manager and His Powers", paper presented to the Mediaset Convention, Venice 12th November, 1996: published by the Department of Sociology at Lancaster University at: www.lancaster.ac.uk/sociology/stslaw1.html

Law, J. (1999b). 'Political Philosophy and Disabled Specificities' (draft), published by Science Studies, Lancaster, and the Department of Sociology, Lancaster University at: www.comp.lancaster.ac.uk/sociology/soc026jl.html

Law, J. (2000). "Transitivities". *Society and Space*, Vol. 18, 133-148.

Law, J. (2001). *Aircraft Stories: Decentering the Object in Technoscience*. Durham, N. Ca., Duke University Press.

Law, J. & Hassard, J. (1999). *Actor Network Theory and After*. Oxford: Blackwell Publishers.

Law, J. & Mol, A. (2000). "Situating Technoscience: an Inquiry into Spatialities" (draft) published by the Centre for Science Studies and the Department of Sociology, Lancaster University, and the Department of Philosophy, the University of Twente, at: http://www.comp.lancaster.ac.uk/sociology/soc052jl.html

Law, J. & Singleton, V. (2000): "This is Not an Object" (draft), published by the Centre for Science Studies and the Department of Sociology, Lancaster University at: www.lancaster.ac.uk/sociology/soc032jl.html

Layder, D. (1994). *Understanding Social Theory*. London: Sage Publications.

March, J.G. & Olsen, J.P. (1995). "Skraldespandsmodeller af beslutningstagen i organisationer". In March, J.G. (ed.) *Fornuft og Forandring - ledelse i en verden beriget med uklarhed*, København: Samfundslitteratur

March, J.G. & Simon, H.A. (1958). *Organizations*. New York: Wiley.

Massumi, B. (1999). *A User's Guide to Capitalism and Schizophrenia*. MIT press.

Mathiesen, A. (1998). "Blomsten af dansk kvalifikationsforskning?". In Eriksen, Gerstoft & Mathiesen (eds.) *Kvalifikationer : definitioner af ord eller relationer mellem mennesker?* København: Munksgaard

Metz, D. & Westenholz, A. (2000). "Identitetsdannelse i midlertidige og spredte arbejdsfælleskaber – belyst vha. et relationelt perspektiv". *Tidsskrift for Arbejdsliv*, Nr. 4.

Miles, M.B. & Huberman, A.B. (1994). *Qualitative Data Analysis: An Expanded Sourcebook*. 2nd edition. Thousand Oaks: Sage Publications.

Mintzberg, H. (1983). *Structure in Fives: Designing effective organizations*. New Jersey: Prentice-Hall.

Mintzberg, H. (1994). *The Rise and Fall of Strategic Planning*, Prentice Hall.

Mol, A. (1999). "Ontological Politics" in Law & Hassard (eds.): *Actor Network Theory and After*, Oxford, UK: Blackwell Publishers.

Mol, A. (2001). *The Body Multiple: Artherosclerosis in Practice*, Durham, N.Ca. and London, Duke University Press.

Mol, A. & Law, J. (1994): "Regions, Networks and Fluids: Anaemia and Social Topology*", Social Studies of Science*, Vol.24, 641-71.

Mørch, S. (1985). At forske i ungdom - et socialpsykologisk essay. København: Forlaget Rubikon.

Olesen, F. (1996). Konstruktive studier af videnskab og virkelighed. Fra sociologi til kulturforskning. *PHILOSOPHIA*, årg. 25, 3/4, 11-45.

Pickering, A. (1995). *The Mangle of Practice*. Chicago: University of Chicago Press.

Rasmussen, O.E. (1987). "Kompetenceudvikling som ledelsesopgave", Projektbeskrivelse, Københavns Universitet.

Rasmussen, O.E. (1995). "A Strategy for the Development of a Theory of Organisational Leadership and Administration", *Psychological Yearbook*, Vol. 2, 53-80

Sandberg, J. (2000). "Understanding Human Competence at Work: An Interpretative Approach", *Academy of Management Journal*, Vol. 43, No. 1, 9-25

Singleton, V. & Michael, M. (1993). "Actor-Networks and Ambivalence: General Practitioners in the UK Cervical Screening Programme". *Social Studies of Science*, Vol. 23, 227-64.

Spradley, J.P. (1979). *The Ethnographic Interview.* Fort Worth: Harcourt Brace Jovanovich College Publishers.

Star, S. L. (1991). Power, Technologies and the Phenomenology of Conventions: on being Allergic to Onions. In J. Law (Ed.) *A Sociology of Monsters? Essays on Power, Technology and Domination* (pp. 26-56). Sociological Review Monograph 38. London: Routledge.

Star, S.L. (1992). "The Trojan Door: Organizations, Work, and the 'Open Black Box'*", Systems Practice*, Vol. 5, No.4, 395-410

Star, S.L. & Griesemer, J. (1989). "Institutional ecology, 'translations' and boundary objects: amateurs and professionals in Berkeley's museum of vertebrate zoology, 1907-1939". *Social Studies of Science*, vol. 19, 387-420.

Strauss, A. (1978). "A Social World Perspective" in *Studies in Symbolic Interaction*, Vol. 1, 119-128.

Strauss, A. (1987). *Qualitative Analysis for Social Scientists*. Cambridge University Press.

Suchman, L. (1987). *Plans and Situated Actions: The problem of human - machine communication*, Cambridge University Press.

Traweek, S. (1988). *Beamtimes and lifetimes: the world of high energy physicists*, Cambridge, Mass.: Harvard University Press.

Turnbull, D. (2001). "Go-betweens". Talk at Department of Sociology, Lancaster University, unpublished.

Weick, K. (1979). *The Social Psychology of Organizing*, Reading, MA: Addison-Wesley

Weick, K. (1993): "The Collapse of Sensemaking in Organizations: The Mann Gulch disaster", *Administrative Science Quarterly*, 38 (4), 628-653.

Weick, K. & Roberts, K. (1993). "Collective Mind in Organizations: Heeful interrelating on flight decks", *Administrative Science Quarterly*, 38, 357-381

Wenger, E. (1998). *Communities of Practice: Learning, meaning and identity*. Cambridge University Press.

Whitehead, A.N. (1929/1978). *Process and Reality*. New York: The Free Press.

Yin, R.K. (1994). *Case Study Research*. Thousand Oaks: Sage Publications.

Abstract

Performing Social Work - Competence, Orderings, Spaces and Objects.

This thesis investigates the development of competence in a cross-professional team of social workers during a large-scale organisational change project in the Family and Labour Market Administration in the Municipality of Copenhagen. Through this empirical analysis and through the preceding theoretical discussion, a decentred conception of competence is developed.

Chapter one introduces the thesis and outlines a number of different strategies in the study of competence; At one end of the spectrum, competence is taken to be an individual underlying capacity, which can be isolated and optimised. At the other end, competence is conceptualised in terms of a texture of productive social and material relations. The thesis chooses the latter 'complexifying' or 'decentering' strategy.

Chapter two is a reflection on the methods by which social science constructs 'facts' and the methods by which facts are constructed in the thesis. Principles for a constructionist methodology are tentatively formulated.

Chapter three is a critical discussion of learning theories in psychology and social psychology. It is argued, that all learning theories depend on some notion of a bounded learning system, which adapts to its surroundings. These learning systems may be delineated by a particular content, agent, place or some combination thereof. Through a number of examples it is argued, that the boundaries of these learning systems tend to 'leak'. This indicates that learning theories build on the untenable assumption that the 'entities' that learn can be theoretically determined beforehand. As an alternative the network metaphor in actor-network theory is explored. This theory leaves open the size and the nature of the actors and for this reason, it is argued, that the notion of network is better equipped to study evolving change processes.

Chapter four explores a recent version of post actor-network theory, known as the performative turn. Performances are broadly defined as unbounded, materially heterogeneous, recursive processes that can be imputed to the social. Three different conceptualisations of performance are presented. One conceptualisation of performance describes the patterns of the social as a number of interdependent mini-discourses or modes of ordering. A second conceptualisation describes the patterns of the social as the performance of different types of space. Thirdly, the patterns of the social have been conceptualised through the notion of multiple objects. In this mode of analysis, an object is analysed as an assemblage of practices, that is a set of ways in which the object is 'done' or performed. The three different conceptualisations of performance are the primary theoretical tools, which are used in the analysis of the empirical material.

Chapter five presents four empirical cases gathered from an observation study of a cross-professional team of social workers, which was formed as a part of a large-scale team project in the social administration. The four cases form a chronological story that trace the initial discussions about the team project, the work of subdividing the team into three smaller units, and the subsequent fate of this arrangement. In a running commentary, patterns or performances are imputed to the empirical material. The articulated patterns are akin to performance-as-modes-of-ordering.

At the end of chapter five, it is argued that the modes of ordering in each of the four cases combine into the performance of a particular kind of space. The argument is thus that a different kind of space is performed in each of the four cases. In continuation of this, an account is developed of the kinds of work that maintain each of the spatial configurations as well as the kinds of work that produces a shift from one configuration to the next.

Chapter six continues the empirical analysis of performances and extends it to include performance-as-multiple-objects. Objects which are quintessential to the spatial configurations are identified and the translation of these objects from one kind of space to another is followed. This analysis explicates a number of interdependencies as well as antagonistic relations between the spatial configurations.

Chapter seven summarises the previous argument and discusses the implications. In continuation of the previous analyses of interdependencies between the spatial configurations, it is argued, that the obduracy of these 'blocks' in part depend the development of *temporary* techno-social arrangements. A crucial aspect of the development of competence in the team project is thus the construction of a series of short-lived arrangements that prevent 'blocks' such as managerial rights and professional authority from colliding catastrophically. The assertion that temporary arrangements are crucial to the performance of 'blocks' suggests a supplement to the research agenda of science and technology studies; previously this field has focused almost exclusively on objects that are (or aspire to be) durable. Finally, two methodological procedures are outlined, which may guide the proposed investigation of temporary techno-social arrangements.

Dansk resumé

At Performe Socialt Arbejde
– Kompetence, ordningsmåder, rum og objekter.

Denne afhandling undersøger udviklingen af kompetence i et tværfagligt team af socialarbejdere i forbindelse med et omfattende organisationsudviklingsprojekt i Familie- og Arbejdsmarkedsforvaltningen i Københavns Kommune. Gennem denne empiriske analyse og gennem den forudgående teoretiske diskussion, udvikles et decentreret kompetencebegreb.

Kapitel 1 introducerer afhandlingen og skitserer et antal forskellige strategier, som anvendes i undersøgelse af kompetence. I den ene ende af spektret antages kompetence at være en individuel underliggende kapacitet, som kan isoleres og optimeres. I den anden ende af spektret konceptualiseres kompetence som en tekstur af produktive sociale og materielle relationer. Denne afhandling følger den sidstnævnte "kompleksificerende" eller "decentrerende" strategi.

Kapitel 2 undersøger de metoder, hvormed socialvidenskaben konstruerer kendsgerninger, og hvormed kendsgerningerne i afhandlingen er konstrueret. Der opstilles et bud på principper for en konstruktionistisk metodologi.

Kapitel 3 indeholder en kritisk diskussion af psykologiske og socialpsykologiske læringsteorier. Der argumenteres for, at enhver læringsteori bygger på idéen om et afgrænset system, som tilpasser sig sine omgivelser. Disse læringssystemer kan være defineret udfra et særligt indhold, en særlig agent, en særlig lokalitet, eller en kombination heraf. Gennem et antal eksempler argumenteres der for, at læringssystemer har tendens til at 'lække'. Dette indikerer, at læringsteorier bygger på en uholdbar antagelse om, at den 'entititet', som lærer, kan fastlægges teoretisk på forhånd. Som et alternativ undersøges den netværksmetafor, som anvendes af aktør-netværks-teori (ANT). Denne teori lader spørgsmålet om aktørens størrelse og egenskaber stå åbent, hvilket gør netværksbegrebet bedre udrustet til at undersøge, hvordan forandringsprocesser udfolder sig.

Kapitel 4 undersøger en version af 'post ANT', som er udviklet i de seneste år. Denne teoretiske bevægelse er kendt under betegnelsen den performative vending. Performance kan bredt defineres som uafgrænsede, materielt heterogene, rekursive processer eller mønstre, som kan tilskrives det sociale. Tre forskellige konceptualiseringer af performance præsenteres. Én konceptualisering beskriver performance som et antal gensidigt afhængige mini-diskurser eller ordningsmåder. En anden konceptualisering beskriver det sociales mønstre som performance af et antal forskellige rumlige typer. Endelig er performance blevet konceptualiseret gennem begrebet om multiple objekter. I denne sammenhæng analyseres et objekt som en samling af praksisser, dvs. måder hvorpå det pågældende objekt gøres eller performes. De tre konceptualiseringer af performance er de primære teoretiske redskaber, som bringes i anvendelse på det empiriske materiale.

Kapitel 5 præsenterer fire empiriske cases hentet fra et observationsstudie af et tværfagligt team af socialarbejdere, som blev dannet i forbindelse med et omfattende teamprojekt i en familie- og arbejdsmarkedsforvaltning. De fire cases udgør en kronologisk historie, der først følger nogle indledende diskussioner i teamprojektet, dernæst arbejdet med at underinddele teamet i tre mindre enheder, og endeligt den efterfølgende håndtering af den valgte underinddeling.

Sideløbende med præsentationen af den kronologiske historie foretages en analyse af performances. De mønstre, som her tilskrives materialet, er af typen perfomance-som-ordningsmåder. Ved slutningen af kapitel 5 argumenteres der for, at ordningsmåderne i hver case performer en særlig rumlig type. Påstanden er således, at en særlig form for rum bliver performet i hver af de fire empiriske cases. I forlængelse heraf redegøres der for det arbejde, som opretholder hver af de rumlige konfigurationer, samt for det arbejde der skaber et skift fra en rumlig konfiguration til en anden.

Kapitel 6 fortsætter den empiriske analyse af performance og udvider den til også at omfatte performance-som-multiple-objekter. Der identificeres et antal objekter, som hver især er indbegrebet af en rumlig type. Disse objekters oversættelse fra én rumlig konfiguration til en anden følges. Denne analyse afdækker såvel gensidige afhængigheder som antagonistiske relationer mellem de rumlige konfigurationer.

Kapitel 7 sammenfatter den tidligere argumentation og diskuterer mulige implikationer. I forlængelse af de tidligere analyser af de rumlige konfigurationers gensidige afhængigheder argumenteres der for, at disse 'blokkes' sejlivethed blandt andet afhænger af, at der løbende skabes *midlertidige* tekno-sociale arrangementer. Et afgørende aspekt af kompetenceudviklingen i teamprojektet er således konstruktionen af en serie kortvarige arrangementer, som forhindrer 'blokke' såsom ledelsesmæssige rettigheder og faglig autoritet i at kollidere på en ødelæggende måde. Påstanden om, at midlertidige arrangementer bidrager afgørende til at performe 'blokke', udpeger det midlertidige som et supplerende forskningsfelt for videnskabs- og teknologistudier; hidtil har disse studier fokuseret næsten udelukkende på objekter, som er (eller aspirerer til at blive) stabile og varige. Afslutningsvis skitseres to metodologiske procedurer, som vil kunne vejlede den foreslåede udforskning af midlertidige tekno-sociale arrangementer.

Appendix 1
Project Proposal

Undersøgelse af kompetenceudvikling i arbejdsteams

Etablering af teams i Københavns Kommunes Familie- og Arbejdsmarkedsforvaltning er en gennemgribende organisationsudvikling, som skaber en række nye opgaver, nye fordelinger af eksisterende opgaver og nye omstændigheder omkring opgaveløsningen. Hovedparten af medarbejderne placeres dermed i en situation, hvor de sammen med deres team skal udvikle en række nye kompetencer.

Formål
Projektets formål er at undersøge, hvordan teams udvikler nye kompetencer, at identificere forhold som *fremmer* udviklingen af nye kompetencer samt at pege på forhold som *vanskeliggør* udvikling af nye kompetencer, og som dermed fastholder forvaltningens hidtidige arbejdsmønstre.

Fokuspunkter
Projektet vil undersøge kompetenceudviklingen i teamstrukturen med udgangspunkt i følgende spørgsmål:
Hvordan udvikler teamet internt samarbejde og arbejdsdeling?
Hvordan udvikler teamet relationer til øvrige teams, herunder visitation og underleverandørrelationer.
Hvilke forhold synes at være virke fremmende hhv. hæmmende for at teamet løbende kan udvikle sin kompetence?

Metode
Den konkrete undersøgelse vil belyse forløbet af et antal sager/problemer inden for en nærmere aftalt tidsperiode. Der fokuseres på, hvordan teamet håndterer problemet og i sammenhæng hermed udvikler samarbejdsrelationer internt og eksternt. Dataindsamlingen vil ske gennem deltagerobservation, interviews og evt. analyse af relevante arbejdspapirer.

Teamet
For at få belyst problemet så dybtgående som muligt, vil jeg gerne af teamet have mulighed for at få:
En kort introduktion til arbejdsområdet og de fysiske lokaliteter.
Assistance til udvælgelse af et antal sager og/eller et antal medarbejdere, som kan følges gennem en periode.
Tilladelse til at deltage i relevante interne og eksterne møder.
Tilladelse til at gennemføre opfølgende interviews med udvalgte medarbejdere.

Teamets udbytte
Jeg vil efter observationsperioden sammenfatte mine data til et skriftligt diskussionsoplæg om teamets kompetenceudvikling, herunder muligheder og barrierer.
Dette oplæg vil jeg formidle mundtligt på møder dels med teamet, dels med F&As ledelse.

Tidsramme
Jeg forstiller mig, at undersøgelsen vil kunne foregå på følgende måde:
Teamlederen mhp. afklaring af mulighederne for at følge teamets arbejde.
En kort introduktion projektets formål for teamet v/lederen og undertegnede.
Observation af teamets arbejde og interview af udvalgte medarbejdere, på tidspunkter, hvor det kan indpasses i arbejdsflowet. (3 uger)
Analyse af de indsamlede data og udarbejdelse af diskussionoplæg. (3 uger)
Tilbagemelding til teamet og F&A.

Ansvarlig
Projektet gennemføres af:
Torben Elgaard Jensen, Cand.Psych, Ph.D-stipendiat, Institut for Psykologi, Københavns Universitet.

Som faglige vejledere deltager endvidere:
Jesper Døpping, Cand.Psych, Ph.D, Adjunkt på Psykologisk Institut, Århus Universitet
Arne Prahl, Cand.Psych, Lektor på Institut for Psykologi, Københavns Universitet.

Appendix 2:
Collaboration Agreement

Samarbejdsaftale

mellem

Københavns universitet, Institut for psykologi
og
Familie- og Arbejdsmarkedsforvaltningen
Kontoret for Personale og Organisation

Aftalen omfatter et samarbejde mellem de to parter om Ph.D- projekt om "kompetenceudvikling i arbejdsteams".

Formål:
Projektets formål er at undersøge, hvordan teams udvikler nye kompetencer, at identificere forhold som fremmer udviklingen af nye kompetencer samt pege på forhold som vanskeliggør udviklingen af nye kompetencer og som dermed fastholder hidtidige arbejdsmønstre. Team for voksne med særlige behov, lokalcentret [...] står til rådighed i den konkrete undersøgelsesfase.
Projektet indgår som et delelement i en Ph.D- afhandling om kvalificering af kompetencebegrebet.

Ansvarlig:
- Projektet gennemføres af Torben Elgaard Jensen, Cand. Psych., Ph.D-stipendiat, Institut for psykologi, Københavns Universitet
- Faglig vejledere:
  Jesper Døpping, Cand. psych., Ph.D, Adjunkt på Psykologisk Institut Århus Universitet
  Arne Prahl, Cand. Psych., lektor på institut for psykologi, Københavns Universitet
- Samarbejdspartnere fra Familie- og Arbejdsmarkedsforvaltningen:
  Henrik Dencker, Kontorchef for kontoret for Personale og Organisation
  Lone Sørensen, organisationskonsulent i kontoret for Personale og Organisation

Metode:
Dataindsamlingen vil ske via deltagerobservation i teamet, interviews, gennemgang af konkrete sager, analyser af relevante arbejdspapirer samt observationer af samarbejdsrelationer til øvrige team og samarbejdspartnere, herunder interviews.

Vilkår:
Torben Elgaard Jensen har adgang til de oplysninger, der er relevant for projektet, herunder konkrete sager og arbejdspapirer samt deltagelse i relevante mødefora. Det er en forudsætning at oplysninger, der indgår i undersøgelsen anonymiseres, dvs. at såvel
personfølsomme oplysninger i sager, som interviews er anonyme. Endvidere fremtræder centeret anonymt i projektet.

Undersøgelsens resultater:
Undersøgelsens resultater anvendes frit af Torben Elgaard Jensen i det videre forskningsprojekt. Familie- og Arbejdsmarkedsforvaltningen forbeholder sig ligeledes ret til at anvende resultaterne af undersøgelsesforløbet i eget regi, dog med klar angivelse af kildehenvisning.

Resultaterne fra undersøgelsen, som tilgår forvaltningen, samles i en rapport, der består af 2 delrapporter. Der afrapporteres løbende til det involverede team samt til projektets referencegruppe.
Den endelige afhandling fremsendes til forvaltningen om ca. 2 år.

Referencegruppe:
Referencegruppens formål er at understøtte Torben Elgaard Jensen i projektforløbet. Referencegruppen holder regelmæssige møder. På møderne fremlægges projektets status og foreløbige resultater. Referencegruppens drøftelser tilrettelægges med henblik på den fremadrettede proces i undersøgelsesforløbet.

Referencegruppen består af følgende repræsentanter:
Henrik Dencker, formand
Carsten Stæhr Nielsen (deltager efter behov)
Torben Elgaard Jensen
Jesper Døpping
Arne Prahl
[.....], teamchef, lokalcentret [.....]
1 medarbejderrepræsentant, lokalcentret [.....]
Lone Sørensen, koordinator

Tidsramme:

Maj 99:	Aftaler med teamet om projektets formål omfang og metoder
Maj 99- september 99:	Observationer i teamet (TEJ)
August 99:	Referencegruppen mødes
September 99:	1. delbeskrivelse/diskussionsoplæg (TEJ)
September/oktober:	Referencegruppen mødes
September-december:	Observationer i teamet og analyser af data (TEJ)
December 99:	Referencegruppen mødes (evt)
Januar 2000:	2. delbeskrivelse (TEJ)
Februar 2000:	Referencegruppen mødes
Marts/april 2000:	Endelig rapport (TEJ)
Marts/april 2000:	Referencegruppen mødes
Marts/april 2000:	Afmelding i teamet (TEJ)

Dato:

For Københavns Universitet

Torben Elgaard Jensen og Jesper Døpping

For Familie-og

Arbejdsmarkeds-
forvaltningen

Henrik Dencker